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UNIVERSITYRevision of the genus *Scopodes* Erichson from New Guinea

(Insecta, Coleoptera, Carabidae, Pentagonicinae) *

By Martin Baehr

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The species of the genus *Scopodes* Erichson from New Guinea are revised. Apart from *S. altus* Darlington, all New Guinean species form a related, endemic, highly apomorphic group (together with two species from New Britain and New Ireland, respectively). The known species are redescribed and their ♂ genitalia are described and figured.

Following names are primary homonymes and have been renamed: *Scopodes basalis* Darlington, 1968, homonym of *Scopodes basalis* Broun, 1893, from New Zealand, renamed *Scopodes darlingtoni*, nom. nov. *Scopodes simplex* Darlington, 1968, homonym of *Scopodes simplex* Blackburn, 1894, from Australia, renamed *Scopodes aereus*, nom. nov. *Scopodes viridis* Louwerens, 1969, homonym of *Scopodes viridis* Broun, 1903, from New Zealand, renamed *Scopodes louwerensi*, nom. nov.

Scopodes aereus (nom. nov. for *S. simplex* Darlington) is synonymized with *Scopodes wilsoni* Darlington.

Following 19 new species are described: *Scopodes aspericollis*, spec. nov., *atricornis*, spec. nov., *S. bicolor*, spec. nov., *S. caeruleus*, spec. nov., *S. chalcus*, spec. nov., *S. cupras-cens*, spec. nov., *S. foveipennis*, spec. nov., *S. laevisfrons*, spec. nov., *S. minor*, spec. nov., *S. regularis*, spec. nov., *S. reticulatus*, spec. nov., *S. riedeli*, spec. nov., *S. robustus*, spec. nov., *S. rufipes*, spec. nov., *S. striaticollis*, spec. nov., *S. tristis*, spec. nov., *S. violaceus*, spec. nov., *virescens*, spec. nov., and *viridiaeneus*, spec. nov. All belong to the highly apomorphic, endemic group of New Guinean species that is characterized by the loss of the posterior lateral process and seta of the pronotum, and by wide and usually brightly coloured elytra with more or less reduced striation.

Although the closest relatives of this endemic species-group and the way in which the ancestor of this group reached New Guinea are still uncertain, the group can be divided into two rather clear-cut subgroups. The first subgroup is more plesiomorphic, at least in external characters (viz. elongate and rather depressed body shape, distinct striation and microreticulation of elytra, rather simple male genital ring and in several species also simple apex of aedeagus). The second subgroup is more apomorphic and shows a gradient to extremely apomorphic structures (e.g. in *S. adonis* Darlington). In view of the very inadequate knowledge of the ranges of the species and of the uncertainty of the sister group any considerations about the biogeographical history of the New Guinean *Scopodes* are premature.

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* In part results of the entomological explorations of A. Riedel in New Guinea in 1990, 1991, 1992, 1993, and of the German Hydroentomological Mission No. 4.

Introduction

Scopodes is a genus of conspicuously large-eyed beetles that occurs in Australia, New Zealand, New Guinea, New Britain, New Ireland, and New Caledonia, with a single species occurring as far west as Java. These beetles much resemble miniature tiger beetles, but even more the *Elaphrus* and *Asaphidion* of the northern hemisphere. They are mainly diurnal and live either on the ground in open places, sometimes high up in montane prairies, either in and on logs in wet forests, either under bark in eucalypt forests and woodlands.

Darlington (1968) in his monography on the Carabidae of New Guinea described altogether 8 species of *Scopodes*, 7 of them belonging to a conspicuous, highly apomorphic group of species presumably endemic to New Guinea, New Britain, and New Ireland (Louwerens 1969). More recently, Bell & Bell (1989) described another species and revised the so-called *chimbu*-group that consists in their view of the three species *S. chimbu* Darlington, *S. tafa* Darlington, and *S. wei* Bell & Bell. All New Guinean species are characterized by the loss of the posterior angle and the posterior lateral seta of the pronotum, presence of an anguliform process on which the anterior lateral seta is located, few and very coarse frontal sulci, compact, rather quadrate shape of the elytra, and usually rather bright colour and more or less reduced striation and microsculpture of the Elytra. In most species the elytral punctures are also conspicuously foveate. In some characters, however, they resemble certain Australian species of the so-called *aeneus*-group (Moore 1962) that also lack the posterior lateral seta of the pronotum.

According to Darlington all species of this endemic group are apparently forest dwellers and live mainly in and on logs. According to the collecting circumstances of almost all new species mentioned in this paper, however, this is certainly not the usual habit of the New Guinean species. On the contrary, most New Guinean *Scopodes* live rather on more or less open places on the ground, commonly on wet, sunny, clayish ground, or even at the borders of rivers or small waterfalls. Some species that were collected in the vicinity of Wau, Papua New Guinea, have been caught also in disturbed areas with much open ground or even on landslides (Bell & Bell 1989). A single New Guinean species (*Scopodes altus* Darlington) that is more closely related to certain Australian than to either New Guinean species, lives in high altitude on the ground.

Most of Darlington's species were described from eastern New Guinea (now Papua New Guinea), because the western part of New Guinea (now Irian Jaya) was previously far less well collected. Through courtesy of the collectors Mr. A. Riedel and Mr. M. Balke I was supported with rather plentiful material collected mainly in different parts of Irian Jaya, that includes surprisingly many new species. Thanks to Dr. D. Furth of MCZ, Cambridge/Mass., and to Dr. Samuelson of BMH, Honolulu, I was able to study typical material of all of Darlington's species. During examination of this material, however, the main deficiency of Darlington's work (apart from the general rarity of material from Irian Jaya) turned out: i. e. that Darlington took into consideration only external characters and failed to examine the male genitalia. Partly due to this failure, but partly due to, perhaps, too fast work, neither Darlington's descriptions nor his key allow a distinctive determination of most of his species. Moreover Darlington confounded several species with the result, that the type series of four of his seven species of the endemic species group include more than one species and/or species described by him under another name. Hence in *Scopodes* at least, Darlington's work is taxonomically rather unsatisfactory.

On these reasons all species are redescribed and the male genitalia are figured. A new key for all species is given and figures of the whole beetle are presented.

Measurements

Measurements have been made under a stereo microscope using an ocular micrometer. Length has been measured from tip of labrum to apex of elytra, hence, measurements may slightly differ from those of Darlington. Width of pronotum has been measured including the small lateral setiferous tubercles. The number of frontal sulci was counted between the eyes just behind the anterior supraocular seta.

Material

Apart from the types of Darlington's species, from material borrowed from the Bishop Museum, Honolulu caught by different collectors, and from material collected by Ross Bell in the vicinity of Wau, Papua New Guinea, a large part of the available specimens was collected by the young German collector Alexander Riedel in different parts of New Guinea, though mainly in Irian Jaya on the occasions of five visits during the period from 1990-1993. Some additional material was captured by Michael Balke, another young German collector. Altogether 418 specimens have been examined. Though even with regard to this number only few species are at hand in sufficient numbers, while 8 species are so far known from the holotype only.

Location of types

The holotypes of the new species described from the recently collected material have been either presented to the Zoologische Staatssammlung (ZSM), or they are kept in the collection of the author, though as permanent loan (ZSM-CBM). Paratypes are kept in the collection of the author (CBM), or are distributed in different museum collections. Other types are housed in the MCZ, Cambridge/Mass. and in the BMH, Honolulu.

Abbreviations of collections mentioned in text

ANIC	Australian National Insect Collection, Canberra
BMH	Bernice P. Bishop Museum, Honolulu
BMNH	The Natural History Museum, London
CBM	Collection M. Baehr, München
CMP	Carnegie Museum of Natural History, Pittsburgh
MCZ	Museum of Comparative Zoology, Cambridge, Mass.
RMHL	Rijksmuseum van Natuurlijke Historie, Leiden
USNM	United States National Museum, Smithsonian Institution, Washington D.C.
UVB	University of Vermont Collection, Burlington, Vt.
ZSM	Zoologische Staatssammlung, München
ZSM-CBM	Zoologische Staatssammlung - Collection M. Baehr, München (permanent loan)

Characters

In addition to the male genitalia (aedeagus with parameres, genital ring) useful distinguishing characters include general shape and colour, relative width of pronotum, sculpture of head and pronotum, striation and microreticulation of elytra, shape and colour of antenna, and colour of legs. Female genitalia are basically very similar and are of lesser use for the distinction of species.

Genus *Scopodes*

Scopodes Erichson, 1842, p. 123; Csiki 1932, p. 1504; Britton 1941, p. 192; Moore 1962, p. 238; Darlington 1968, p. 197; Louwerens 1969, p. 366; Bell & Bell 1989, p. 157.

Diagnosis. Genus of subfamily Pentagonicinae, distinguished at first glance by characteristic form, very large eyes, a series of more or less distinct longitudinal sulci between eyes, transversely striolate pronotum, and usually trifoveate Elytra. More technical characters include: Ligula swollen, about as long as paraglossae; ♂ anterior tarsi uniformly, not biserially squamose; punctures of 3rd interval usually conspicuously foveate.

The endemic group occurring in New Guinea and the neighbouring islands is further characterized by: very large eyes; usually few and very coarse frontal sulci; triangular pronotum with the anterior lateral seta situated on a triangular process, but without posterior lateral seta and posterior angular process; regular and coarse transverse sulci on disk of pronotum; short and wide, usually markedly convex elytra generally with large and deep foveae and rather reduced striation; and mostly bright metallic colouration.

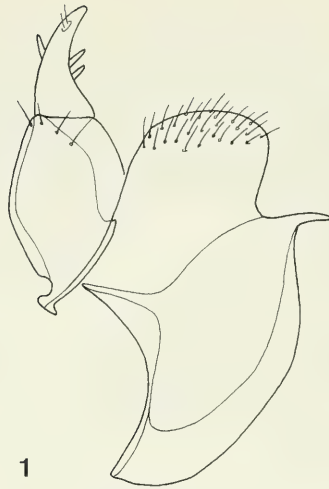


Fig. 1. *Scopodes robustus*, spec. nov. ♀ genitalia. Stylomeres and lateral plate.

♂ genitalia: Sternum VIII wide, posterior margin widely interrupted (Fig. 20g). Genital ring more or less asymmetric, sometimes highly deformed. Aedeagus rather curved, more or less sinuate with usually distinctly prolonged apex that is sometimes knob-shaped or even hooked. Orificium medium-sized. Internal sac moderately folded. Aedeagus and genital ring in most species fairly characteristic.

♀ genitalia (Fig. 1): Stylomere 2 rather elongate, slightly curved and fairly acute, usually furnished with 2 ventrolateral ensiform setae, 1 dorsomedian ensiform seta (usually very difficult to detect, therefore not mentioned by Bell & Bell 1989), and usually with 1, rarely 2 nematiform setae originating from a groove near apex. Sometimes the seta is absent, but the groove is always present. Stylomere 1 with a row of 1-5 setae near apex. The large lateral plate at apex more or less densely setose. The ♀ genitalia are rather similar throughout the New Guinean species and are of limited use for species distinction.

Key to the species of genus *Scopodes* Erichson from New Guinea

1. Prothorax with 2 setae each side, the posterior seta on conspicuous dentiform process; depressed, black species; elytra completely striate. Central Irian Jaya *altus* Darlington
- Prothorax with only 1 seta each side, in anterior third, without posterior-lateral seta and process 2.
2. Elytra with conspicuous, irregular, sericeous pattern or markedly microreticulate, extensively but irregularly striate; foveae in 3rd interval large, though shallow 3.
- Elytra without conspicuous sericeous pattern, microreticulation usually less marked, rather superficial or at all absent, striation variable, though usually less extensive; foveae in 3rd interval either large and deep, or very small and inconspicuous 13.
4. Foveae in 3rd interval more or less conspicuously blue; legs always uniformly yellow or light reddish 5.
- Foveae in 3rd interval not or but faintly blue; legs dark, at most tibiae reddish or light piceous, or uniformly light, in that case colour vividly cupreous or greenish-cupreous and aedeagus with wide, spatulate, laterally hooked apex 8.
5. Smaller species (c. 3.5 mm); colour bronzed or somewhat greenish; antenna almost completely reddish, short, median segments c. as wide as long; frontal sulci fewer, c. 6; aedeagus with simple apex (Fig. 9). Eastern central Papua New Guinea *tafa* Darlington

- Larger species (>4 mm); colour either bright green, or bronzed without any green reflections, or cupreous, or pronotum and head green, elytra cupreous; antenna with 4 basal segments yellow, rest more or less contrastingly dark, longer, median segments distinctly longer than wide; frontal sulci more numerous, 8-9; aedeagus either with knob-like apex or simple, in latter case either colour bright green or microreticulation of elytra almost isodiametric. 6.
- 6. Colour completely bronzed; microreticulation of elytra feebly transverse or almost isodiametric; aedeagus rather straight, apex of ♂ genital ring elongate (Fig. 12). Eastern central Irian Jaya.
..... *reticulatus*, spec. nov.
- Colour bright green, or cupreous, or head and prothorax green, elytra cupreous; microreticulation of elytra markedly transverse; aedeagus rather convex, apex of ♂ genital ring short (Figs 10, 11) 7.
- 7. Colour always completely bright green; elytral foveae very contrastingly blue; aedeagus with simple apex (Fig. 11). Eastern central Papua New Guinea, eastern central Irian Jaya, Vogelkop, westernmost Irian Jaya *foveipennis*, spec. nov.
- Colour completely cupreous or head and prothorax green, elytra cupreous; elytral foveae less contrastingly blue; aedeagus with knob-like apex (Fig. 10). Eastern central Papua New Guinea
..... *viridiaeneus*, spec. nov.
- 8. Legs uniformly yellow or light reddish; large, wide species with cupreous elytral suture; aedeagus with wide, spatulate, laterally hooked apex (Fig. 8). Central eastern Papua New Guinea
..... *wei* Bell & Bell
- Legs dark, at most tibiae reddish or light piceous; less wide species without cupreous elytral suture; aedeagus without or with less wide, barely spatulate apex (Figs 3, 4, 6, 7) 9.
- 9. Colour bright green or green with slight blue tinge; length <4 mm; striation of elytra rather superficial; apex of aedeagus (when known) slightly knob-like (Fig. 4) 10.
- Colour either cupreous or blackish-greenish; length variable, though when <4 mm, then apex of aedeagus not knob-like (Figs 3, 6, 7) and elytral striation distinct and rather regular 11.
- 10. Larger species, c. 4 mm; clypeus green, labrum blackish-green; frontal sulci strongly curved, slightly irregular; antenna elongate, median segments c. 1.5 × as long as wide, contrastingly black from 5th segment; striation of elytra almost complete; apex of aedeagus slightly knob-like (Fig. 4). Northeastern Papua New Guinea *virescens*, spec. nov.
- Smaller species, c. 3.6 mm; clypeus and labrum contrastingly blackish-aeeneous; frontal sulci parallel, markedly regular; antenna short, median segments almost as wide as long, reddish throughout, only terminal segments slightly darkened; striation of elytra almost absent except near base; ♂ genitalia unknown. Eastern central Papua New Guinea *regularis*, spec. nov.
- 11. Small species, <4 mm; colour blackish-bronzed, head and prothorax with distinct green lustre; head and pronotum with rather regular, less coarse sulci; antenna short, median segments little longer than wide; elytra short and wide, ratio l/w <1.35; striation distinct; lower surface of aedeagus laterally without sharp edge, apex simple (Fig. 3). Central Papua New Guinea *chimbu* Darlington
- Larger species (>4 mm); colour cupreous, or blackish with dark greenish, bluish, or cupreous tinge; head and pronotum with remarkably irregular, coarse sulci; antenna elongate, median segments c. 1.3-1.5 × as long as wide; elytra more elongate, ratio l/w >1.4; striation rather weak; lower surface of aedeagus laterally with sharp edge, apex more or less widened (Figs 6, 7) 12.
- 12. Antenna slightly shorter, median segments c. 1.3-1.4 × as long as wide, less contrastingly coloured; ♂ genital ring laterally at apex excised (Fig. 6e); aedeagus shorter, more curved, laterally more sinuate, apex distinctly knob-like (Fig. 6). Eastern central Papua New Guinea
..... *aspericollis*, spec. nov.
- Antenna slightly longer, median segments almost 1.5 × as long as wide, very contrastingly coloured; ♂ genital ring laterally at apex not excised (Fig. 7e); aedeagus longer, less curved, laterally less sinuate, apex not distinctly knob-like (Fig. 7). Eastern central Irian Jaya
..... *cuprascens*, spec. nov.

13. Pronotum without lateral margin, without lateral triangular process; elytra elongate and egg-shaped, apical margin deeply concave, inner angle acute; foveae in 3rd interval minute; aedeagus with depressed, laterally hooked apex (Fig. 28). Northwestern Papua New Guinea *adonis* Darlington
- Pronotum with distinct lateral margin, with lateral triangular process; elytra wider, not egg-shaped, apical margin at most feebly concave, inner angle obtuse; foveae in 3rd interval large or, rarely, small; aedeagus different 14.
14. Foveae in 3rd interval small, or even barely visible; colour violaceous **and** elytra almost without striation and microreticulation **and** transverse sulci of pronotum rather superficial; ♂ genitalia see figs. 26, 27 15.
- Foveae in 3rd interval always large and conspicuous; colour not violaceous, **or** elytra striate, **or** microreticulate to some extent, **or** transverse sulci of pronotum coarse and distinct 16.
15. Foveae in 3rd interval usually smaller, barely visible; elytra almost non-striate; apex of aedeagus not lancet-shaped (Fig. 26); ♀ sternum VII without distinct notch in middle of apical margin. Central Irian Jaya *violaceus*, spec. nov.
- Foveae in 3rd interval usually larger, well visible; elytra usually feebly striate; apex of aedeagus lancet-shaped (Fig. 27); ♀ sternum VII with distinct notch in middle of apical margin. Vogelkop, western Irian Jaya *riedeli*, spec. nov.
16. Legs uniformly yellow; aedeagus either very little curved and with straight apex (Fig. 17), or with upturned apex (Fig. 18), or with marked knob at apex (Fig. 23, 25), in latter case ♂ genital ring markedly irregular 17.
- Legs dark, at most tibia reddish or light piceous; aedeagus and ♂ genital ring different (Figs 13-15, 19-22) 21.
17. Larger species, >4 mm; colour uniformly green; elytra faintly, though completely striate; aedeagus with strong knob at apex, ♂ genital ring markedly irregular, apex acute (Fig. 25). Eastern central Irian Jaya *rufipes*, spec. nov.
- Generally smaller species, <4 mm; colour of elytra blackish-bronzed with more or less greenish tinge, or brassy, or cupreous, but colour of beetle never uniformly green; elytra only at base faintly striate; aedeagus different, when ♂ genital ring highly asymmetric, then at apex not acute (Figs 17, 18, 23). 18.
18. Colour uniformly brassy; transverse sulci of pronotum rather superficial; foveae in 3rd interval medium-sized, moderately conspicuous; aedeagus upturned at apex, ♂ genital ring not very asymmetric (Fig. 18). Vogelkop, western Irian Jaya *chalceus*, spec. nov.
- Colour not uniformly brassy, usually head and pronotum green, or blue, or violaceous; transverse sulci of pronotum very distinct; foveae in 3rd interval large and conspicuous; aedeagus either straight or with knob at apex, in latter case ♂ genital ring very asymmetric and wide at apex (Figs 17, 23) 19.
19. Colour of elytra blackish-bronzed with greenish tinge, head and pronotum contrastingly green; foveae on 3rd interval not conspicuously blue at bottom; aedeagus straight with narrow, straight apex (Fig. 17). Eastern central Irian Jaya *bicolor*, spec. nov.
- Colour of elytra blackish with bluish and coppery tinge, head and pronotum blue-violaceous; foveae on 3rd interval conspicuously blue at bottom; aedeagus either slightly upturned with denticulate knob at apex, or unknown, ♂ genital ring highly asymmetric with wide apex (Fig. 23). Vogelkop, western Irian Jaya 20.
20. Head and pronotum finely punctate, less glossy, colour of both blue-violaceous; frons and clypeus rather coarsely striolate; striation of pronotum very dense; foveae on 3rd interval slightly smaller; microreticulation of elytra absent; aedeagus with upturned, denticulate, knob-like apex, ♂ genital ring highly asymmetric, with wide apex (Fig. 23). Vogelkop, western Irian Jaya *striaticollis*, spec. nov.

- Head and pronotum almost impunctate, highly glossy, colour of both steel-blue; frons and clypeus without striolation, glossy; striation of pronotum slightly less dense; foveae on 3rd interval very large; microreticulation of elytra distinct, though superficial; ♂ genitalia unknown. Vogelkop, western Irian Jaya *caeruleus*, spec. nov.
- 21. Colour bright blue or blue-violaceous 22.
- Colour never bright blue, either green, or cupreous-green, or blackish-bronzed 23.
- 22. Larger species, >4 mm; foveae in 3rd interval large and deep, bright blue at bottom, somewhat contrasting; elytra not microreticulate; pronotum narrow, transverse striae numerous, coarse, and very regular; aedeagus rather straight on lower surface, apex upturned, ♂ genital ring irregular, narrowed to apex (Fig. 20). Eastern Irian Jaya *cheesmanni* Darlington
- Smaller species, c. 3.5 mm; foveae in 3rd interval smaller and shallower, not contrastingly blue at bottom; elytra distinctly, though superficially microreticulate; pronotum wide, transverse striae fewer, more superficial and irregular; aedeagus convex on lower surface, apex not upturned, ♂ genital ring regular (Fig. 21). Central Irian Jaya, central Papua New Guinea *minor*, spec. nov.
- 23. Colour completely green or elytra cupreous-green (doubtful species under both couplets) 24.
- Colour blackish-bronzed, at most with faint greenish tinge 26.
- 24. Large species, >4 mm; colour plain green or elytra greenish-cupreous; foveae in 3rd interval large and deep, green at bottom; pronotum wide **and** transverse sulci usually superficial; ♂ genital ring at apex markedly asymmetric (Fig. 22e); aedeagus see fig. 22. Central Irian Jaya
..... *robustus*, spec. nov.
- Smaller species, c. 3.5 mm; colour either plain green or blackish with green reflexions; foveae in 3rd interval less large, not markedly green at bottom; pronotum either rather narrow **or** transverse sulci deep; genital ring at apex rather symmetric (Fig. 15e) or unknown; aedeagus see fig 15 25.
- 25. Colour plain green; elytra barely striate; pronotum rather narrow, transverse sulci superficial; frontal sulci rather shallow, anteriorly abbreviated, frons completely smooth; ♂ genitalia unknown. Central Irian Jaya *laevifrons*, spec. nov.
- Either colour greenish or elytra blackish-bronzed with green reflexions; elytra at least at base distinctly striate; pronotum wide, transverse sulci rather distinct; frontal sulci distinct, anteriorly not or less abbreviated, frons not completely smooth; aedeagus with knob-like apex, ♂ genital ring rather symmetric (Fig. 15). Central Papua New Guinea *darlingtoni*, nom. nov. (= *basalis* Darlington)
- 26. Small, c. 3.5 mm, rather depressed, uniformly blackish species; pronotum narrow; elytra without striation and microreticulation; lower surface of aedeagus almost straight, apex short and narrow (Fig. 19). Vogelkop, western Irian Jaya *tristis*, spec. nov.
- Either small or larger species; when small, then pronotum wide and elytra short and compact and rather greenish; when larger, then elytra with distinct microreticulation; either lower surface of aedeagus markedly convex and apex wide and elongate (Figs 13, 14), or aedeagus with knob-like apex (Fig. 15). Distribution different 27.
- 27. Small species, usually <3.5 mm, **and** elytra short, compact, usually with some green tinge or even almost green, **and** elytra at base distinctly striate, **and** without oblique impression in anterior third of elytra; aedeagus with knob-like apex, ♂ genital ring at apex rather symmetric (Fig. 15). Central Papua New Guinea *darlingtoni*, nom. nov. (= *basalis* Darlington)
- Larger species (usually c. 4 mm, rarely slightly smaller); elytra usually less compact, blackish-bronzed, either almost nonstriate or distinctly and completely striate, with oblique impression or not; lower surface of aedeagus markedly convex, apex not knob-like, ♂ genital ring at apex asymmetric (Figs 13, 14) 28.
- 28. Antenna contrastingly black from 5th segment; transverse sulci of pronotum very coarse; elytra without distinct oblique impression in anterior third; ♂ genital ring at apex markedly asymmetric (Fig. 14e); aedeagus see fig. 14. Central eastern Irian Jaya *atricornis*, spec. nov.

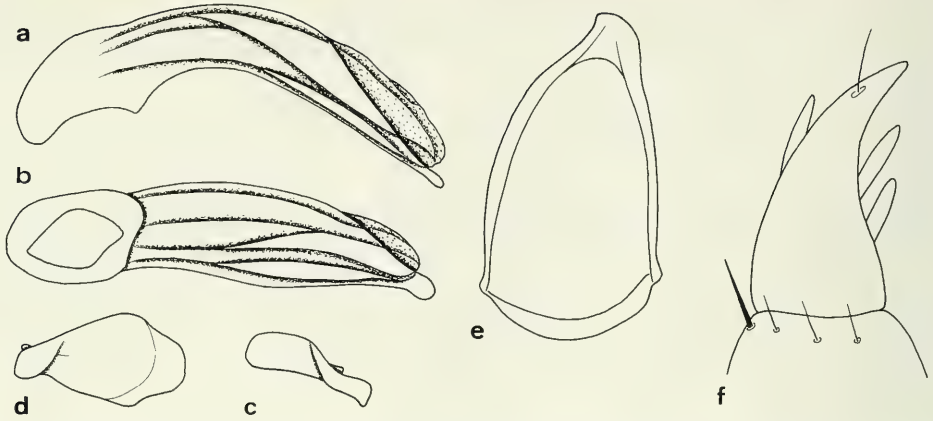


Fig. 2a-f. *Scopodes altus* Darlington. ♂ and ♀ genitalia. a. Lateral view of aedeagus. b. Lower surface of aedeagus. c. Right paramere. d. Left paramere. e. Genital ring. f. Stylomere 2.

- Antenna not contrastingly black from 5th segment, at most gradually darkened; transverse sulci of pronotum rather superficial; elytra with distinct oblique impression in anterior third; ♂ genital ring at apex tapering, though not markedly asymmetric (Fig. 13e); aedeagus see fig. 13. Eastern Papua New Guinea *wilsoni* Darlington

The species

Scopodes altus Darlington

Figs 2, 29, 55

Scopodes altus Darlington, 1968, p. 198.

Types. Holotype (not seen): ♂, Neth. Ind. Amer. New Guinea Exp. Scree Valley Camp, 3800 m IX.1938, L. J. Toxopeus leg. (RNHL). - Paratypes: 1♂, same data (MCZ - seen); 1♀, Neth. Ind. Amer. New Guinea Exp. Lake Habbema, Snow Mts., 3250-3300 m, VII-VIII.1938, L. J. Toxopeus leg. (RNHL - not seen).

Diagnosis. Black, depressed, highly sericeous, irregularly and more or less distinctly striate species with posterior pronotal seta present and situated on conspicuous dentiform process; head with numerous, very fine striae between eyes, pronotum with very numerous, irregular striae, highly coriaceous; labrum bisetose.

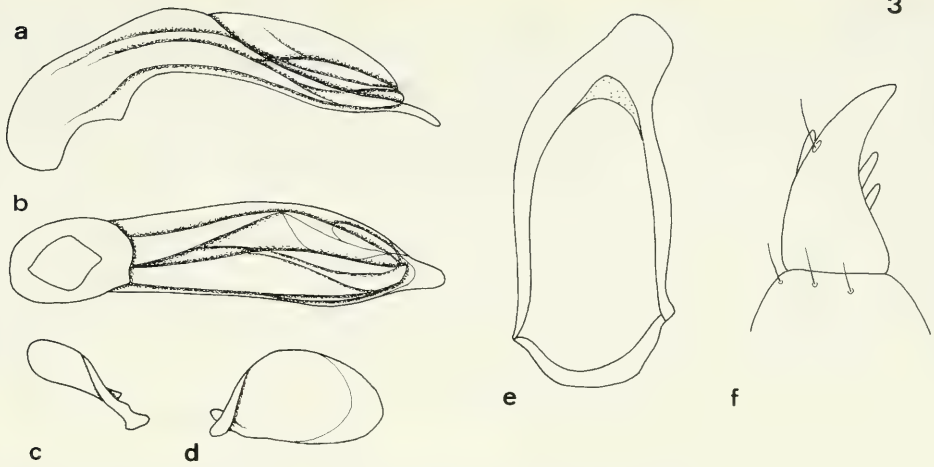
This species belongs to the main body of the genus and is very similar to certain Australian species.

Description

Because this species is unique within the New Guinean *Scopodes*, it cannot be confounded with other species. Hence the description of the external morphology in Darlington (1968) is sufficient for the present. The ♂ and ♀ genitalia, however, are described herein and the habitus is figured. There is a minor possibility that *S. altus* is conspecific with one or another species from northern Australia. This question must await a general revision of the Australian *Scopodes* that is strongly needed.

♂ genitalia (Figs 2a-e). Genital ring not deformed, barely asymmetric, large, fairly wide. Apex rather narrow, arms fairly narrow. Aedeagus large, barely curved, fairly asymmetric, lower surface almost straight, apex short, slightly knob-like, rather asymmetric. Orificium fairly elongate. Parameres large, as in figs 2c,d, the left one markedly deformed.

♀ genitalia (Fig. 2f). Stylomere 2 elongate, rather curved, with dorsal ensiform and nematiform seta. Both dorsal and ventral ensiform setae very large. Nematiform seta strong and elongate. Apex of stylomere 1 with c. 4-5 elongate hairs, the median one thick, subensiform. Lateral plate densely setose.



3

Fig. 3a-f. *Scopodes chimbu* Darlington. ♂ and ♀ genitalia. For legends see Fig. 2.

Variation. Apart from some differences of size little variation noted.

Distribution (Fig. 55). Known only from the Snow Mountains in central Western New Guinea (Irian Jaya).

Habits. Collected in high altitude prairies on the ground, on black, open, peaty soil, between moss.

Additional material examined (71): 29 ♂♂, 42 ♀♀, Irian Jaya, Jayawijaya-Prov., Pass between Lake Habbema and Ibele-Valley, 3300 m (W. Wamena), 21.X.1993, leg. A. Riedel (BMH, CBM, UVB, ZSM).

Scopodes chimbu Darlington

Figs 3, 30, 55

Scopodes chimbu Darlington, 1968, p. 199; Bell & Bell 1989, p. 158.

Types. Holotype: ♂, Chimbu Vy, N.G. (Bismarck Rge.) open, 5-7500 ft Oct '44 Darlington M.C.Z. Holotype 31499 (MCZ). - Paratypes: 2 ♀♀, same data, M.C.Z. Paratype 31499, Paratype *Scopodes chimbu* Darl. (MCZ).

Diagnosis. Rather small and short, bronzed-black species with some greenish lustre on head, very large, though not contrasting elytral foveae, distinct striation, and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by dark legs, short antenna, the median segments of which are almost as wide as long, and the simple apex of the aedeagus.

Description

Measurements. Length: 3.4-3.65 mm; width: 1.5-1.55 mm. Ratios. Width head/pronotum: 1.15-1.18; width/length of pronotum: 1.29-1.35; width elytra/pronotum: 1.76-1.77; length/width of elytra: 1.32-1.34.

Colour. Bronzed-black, head, pronotum, and sometimes also elytra with faint greenish lustre, middle of head sometimes faintly purplish. Labrum and clypeus blackish, sometimes with faint greenish tint. Antenna black, 1st-4th segments dirty yellow, apex of 4th segment darkened. Legs piceous, tibiae dark reddish.

Head. Eyes very large, space between inner border of eyes slightly wider than diameter of eye. Labrum rather short and wide, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part more or less coarsely striate, rugose, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons variably, rather irregularly wrinkled, moderately glossy. Frons between eyes with c. 8 deep, rather straight, though somewhat irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, impunctate. Whole upper surface of head moderately rugose, fairly glossy. Antenna short, median segments c. 1.1 × as long as wide.

Pronotum. Convex, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost straight to faintly convex, in front of posterior angles not concave. Lateral triangular process distinct, though small, triangular, laterally not much projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, barely visible transverse sulcus. Whole upper surface with dense, moderately coarse, in posterior part rather regular transverse sulci. Surface almost without puncturation, without microreticulation, moderately rugose, rather glossy.

Elytra. Rather short and wide, but fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third somewhat excised. Apex wide, apical border oblique, barely sinuate. Whole surface rather regularly, distinctly striate. Foveae in third interval very wide, though shallow, not contrasting. Surface fairly uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores comparatively small, rather inconspicuous. Wings elongate.

Lower surface. Metepisternum c. 1.6-1.8 × as long as wide. Sternites with comparatively dense and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 3a-e). Genital ring somewhat deformed, asymmetric, large, fairly narrow. Apex fairly wide, rectangular, arms moderately wide. Aedeagus large, fairly curved, barely asymmetric, lower surface gently convex, near apex rather sinuate, apex elongate, somewhat spoon-shaped. Orificium fairly elongate. Parameres large, as in figs 3c,d.

♀ genitalia (Fig. 3f). Stylomere 2 medium-sized, rather curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae medium-sized. Apex of stylomere 1 with c. 3 elongate hairs. Lateral plate densely setose.

Variation. Slight variation noted in colour and relative width of pronotum.

Distribution (Fig. 55). Eastern central Papua New Guinea.

Habits. According to the description specimens were collected "in the more open part of the Chimbu Valley".

Additional material examined (10): 1 ♀, Saruwaged Ra. upper Bunbok Valley, NG, 18-2000 M, V(29)-1955, EO Wilson (MCZ); 1 ♂, Joangeng, Apr. 7/8-55, 500 M, Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson (MCZ); 1 ♂, Tumnang, Apr. 14/15-55, 14-1600 M, Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson (CBM); 1 ♀, Morobe Distr. Mt. Misim, New Guinea Stevens (MCZ); 1 ♂, NEW GUINEA (NE) Sepalakambang Salawaket Range 1920 m, IX-12-1956, E. J. Ford, Jr. Collector, *Scopodes chimbu* Darl. (BMH); 1 ♀, NEW GUINEA: NE Kepilam, 2420-2450 m, 21.VI.1963, J. Sedlacek Collector BISHOP, *Scopodes chimbu* Darl. (BMH); 2 ♀ ♀, PAPUA NEW GUINEA, Wau-Mt. Missim Apr.2-3,1982 Coll. R.&J. Bell 1980-2000 m, *Scopodes chimbu* det. R. T. Bell (UVB); 1 ♀, PAPUA NEW GUINEA, Wau-Mt. Missim Mar.26-28,1982 Coll. R.&J. Bell 1950 m, *Scopodes chimbu* det. R. T. Bell (UVB).

There is an additional, freshly shed ♂ included in *S. chimbu* that may belong to another species: 1 ♂, Morobe Distr. Mt. Misim, New Guinea Stevens (MCZ). This rather shrunk specimen differs by cupreous rather than greenish and blackish colour, by slightly more rugose frontal sulci and pronotal striae, and apparently also by longer and less striate Elytra. Hence it likely belongs to *S. aspericollis*, spec. nov. (see below). Unfortunately the very weak sclerotization and rather strong deformation of the aedeagus does not allow exact determination of this specimen. Hence, more material is needed to decide, whether it is conspecific with *S. chimbu* or not.

Scopodes virescens, spec. nov.

Figs 4, 31, 56

Types. Holotype: ♂, NEW GUINEA: NE, Finisterre Range, Saidor: Matoko, VIII-29-IX-5-1958, W. W. Brandt Collector BISHOP, *Scopodes chimbu* Darl. (BMH). - Paratype: 1 ♂, NEW GUINEA, Western Highlands, Mt. Hagen Valley, Keltiga, 5600 ft. 28.9-25.10.1961, W. W. Brandt (ANIC).

Diagnosis. Medium-sized, rather short, bright green species with some bluish lustre, large, though shallow and not contrasting elytral foveae, rather feeble striation, and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by dark legs, fairly elongate, from 5th segment black antenna, the median segments of which are almost 1.5 × as long as wide, coarse, markedly curved frontal sulci, and the slightly knob-like and turned apex of the aedeagus.

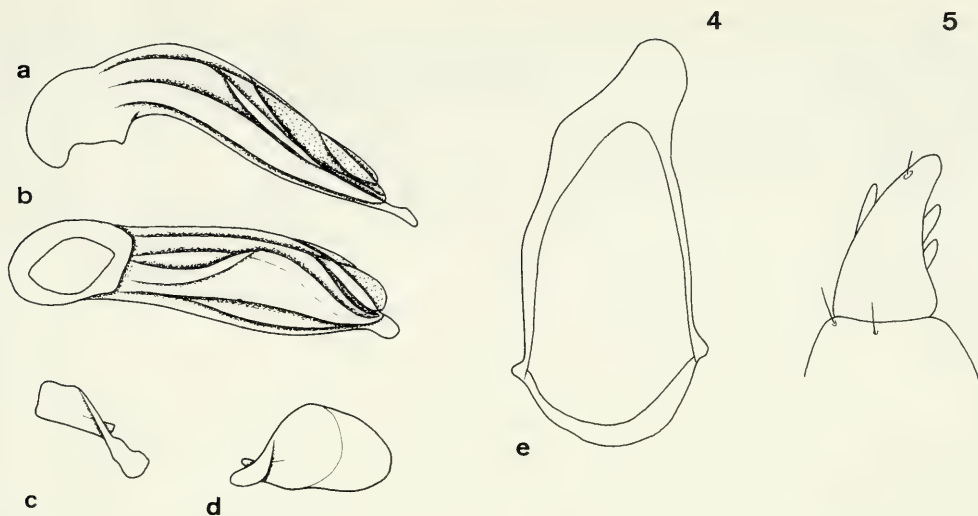


Fig. 4a-e. *Scopodes virescens*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Fig. 5. *Scopodes regularis*, spec. nov. ♀ stylomere 1.

Description

Measurements. Length: 4.0–4.1 mm; width: 1.65–1.70 mm. Ratios. Width head/pronotum: 1.14–1.16; width/length of pronotum: 1.23; width elytra/pronotum: 1.70–1.72; length/width of elytra: 1.36.

Colour. Bright green, in some parts with some bluish lustre, middle of head and centre of pronotum faintly purplish. Labrum blackish-green. Antenna black, 1st–4th segments dirty yellow, apex of 4th segment darkened. Legs blackish, tibiae dark reddish.

Head. Eyes very large, space between inner border of eyes slightly narrower than diameter of eye. Labrum rather elongate, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with very shallow, transverse sulcus, whole surface coarsely striate, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons coarsely wrinkled, moderately glossy. Frons between eyes with c. 10 coarse, markedly curved, somewhat irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, impunctate. Whole upper surface of head moderately rugose, fairly glossy. Antenna rather elongate, median segments almost $1.5 \times$ as long as wide.

Pronotum. Convex, rather wide, fairly trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost straight, in front of posterior angles not concave. Lateral triangular process distinct, though small, triangular, laterally not much projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, barely visible transverse sulcus. Whole upper surface with rather dense, coarse, in posterior part rather regular transverse sulci. Surface almost without puncturation, without microreticulation, moderately rugose, rather glossy.

Elytra. Moderately short and wide, but fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third somewhat excised, in posterior third almost straightly narrowed to posterior lateral angle. Apex wide, apical border oblique, barely sinuate. Whole surface rather irregularly, superficially striate. Foveae in third interval wide, though very shallow, not contrasting. Surface fairly uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores comparatively small, rather inconspicuous. Wings elongate.

Lower surface. Metepisternum c. $1.7 \times$ as long as wide. Sternites apparently with sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 4a-e). Genital ring somewhat deformed, asymmetric, large, fairly narrow, near apex distinctly bisinuate. Apex rather narrow, turned to right, arms moderately wide. Aedeagus large, fairly curved, asymmetric, lower surface convex, near apex slightly sinuate, apex rather short, slightly knob-like, turned to left. Orificium fairly elongate. Parameres large and short, as in figs 4c,d.

♀ genitalia. Unknown

Variation. Little variation noted.

Distribution (Fig. 56). Finisterre Range and Western Highlands, northeastern and central Papua New Guinea.

Habits. Unknown.

Etymology. The name refers to the completely green surface.

Scopodes regularis, spec. nov.

Figs 5, 32, 55

Types. Holotype: 1 ♀, New Guinea: NE, N. Slope Mt. Strong, 26-3000 m, 8-10.I.68, J. H. Sedlacek Collector, *Scopodes tafa* Darlington det. G. E. Ball, 1989 (BMH).

Diagnosis. Small and short, bright green species with some purplish lustre, large, though shallow and not contrasting elytral foveae, very faint striation, and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by dark legs, short, almost completely reddish antenna, the median segments of which are almost as wide as long, and regular, markedly parallel frontal sulci.

Description

Measurements. Length: 3.6 mm; width: 1.5 mm. Ratios. Width head/pronotum: 1.20; width/length of pronotum: 1.23; width elytra/pronotum: 1.81; length/width of elytra: 1.33.

Colour. Bright green, centre of elytra with purplish lustre. Clypeus and labrum blackish-aedealous. Antenna reddish throughout, only the terminal segments slightly darker. Legs dark piceous, tibiae dirty yellow.

Head. Eyes very large, space between inner border of eyes slightly narrower than diameter of eye. Labrum rather elongate, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with distinct transverse sulcus, basal part coarsely striate, apical part glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons slightly wrinkled, rather glossy. Frons between eyes with c. 10 rather coarse, parallel, markedly regular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, impunctate. Whole upper surface of head rather smooth, glossy. Antenna short, median segments almost as wide as long.

Pronotum. Convex, rather wide, fairly trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost straight, in front of posterior angles not concave. Lateral triangular process distinct, though small, triangular, laterally not much projecting, curved up. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with shallow, wide, distinct transverse sulcus. Whole upper surface with rather dense, coarse, fairly irregular transverse sulci. Surface almost without puncturation, without microreticulation, fairly rugose, moderately glossy.

Elytra. Short and wide, but fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third somewhat excised. Apex wide, apical border oblique, gently convex. Surface only near base slightly striate. Foveae in third interval wide, though very shallow, not contrasting. Surface rather uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores comparatively small, rather inconspicuous. Wings elongate.

Lower surface. Metepisternum c. 1.6 × as long as wide. Sternites with sparse and short pilosity, with distinct microreticulation.

♂ genitalia. Unknown.

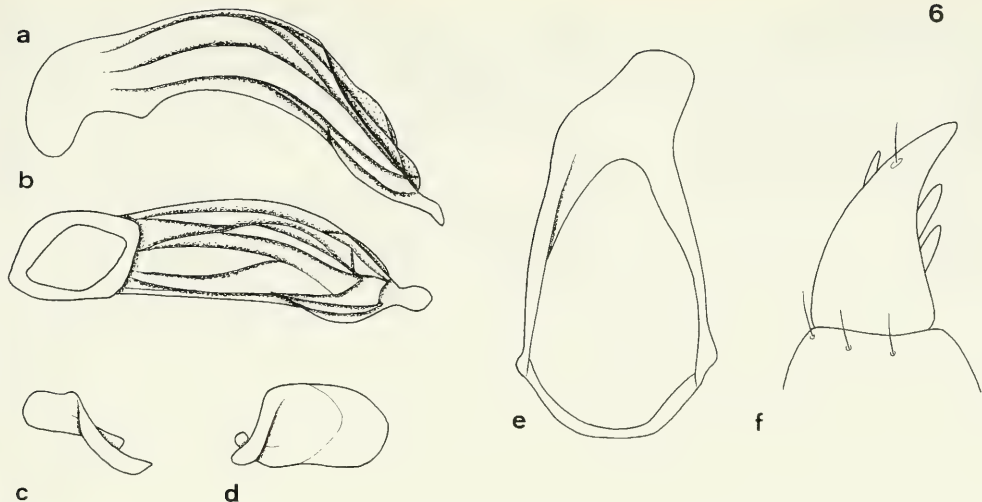


Fig. 6a-f. *Scopodes aspericollis*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

♀ genitalia (Fig. 5). Stylomere 2 medium-sized, rather curved, with dorsal ensiform and nematiform seta, the latter situated close to apex. Ventral ensiform setae short. Apex of stylomere 1 with c. 3 elongate hairs. Lateral plate densely setose.

Variation. Unknown.

Distribution. (Fig. 55). Eastern central Papua New Guinea. Known only from type locality.

Habits. Unknown. Holotype collected in 2600-3000 m.

Etymology. The name refers to the regular, parallel frontal sulci.

Scopodes aspericollis, spec. nov.

Figs 6, 33, 56

Scopodes chimbu Darlington (in part), Bell & Bell 1989, p. 158.

Types. Holotype: ♂, N. Guinea: NE, MT. Shungol, 1650-2730 m, 8-14.XI.1968, Mena. Collector, *Scopodes chimbu* Darlington det. G. Ball 1989 (BMH). - Paratypes: 26 ♂♂, 39 ♀♀, PAPUA NEW GUINEA Wau-Mt. Kaindi, 2300 m, Mar.1, Mar.8, Mar.17, Apr.6, 1982 Coll. R. & J. Bell, *Scopodes chimbu* det. R. T. Bell (CBM, UVB); 1 ♂, NEW GUINEA: NE, Wau, 2400 m, 9-12.I.1962, J. Sedlacek Collector BISHOP, J. H. & M. Sedlacek, G. Monteith & Native BISHOP MUSEUM, *Scopodes* cf. *tafa* Darl. (BMH).

Diagnosis. Rather large, elongate, completely bronzed or blackish-greenish, or bluish species, or with dark bluish head and pronotum, sometimes with some purplish lustre on head, with large, though shallow and not contrasting elytral foveae, distinct, complete and rather regular striation, and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by dark legs, medium sized, contrastingly black antenna from 5th segment, the median segments of which are c. 1.3 × as long as wide, very coarse and irregular frontal and pronotal sulci, and markedly curved, in front of apex widened and carinate aedeagus with markedly knob-like apex.

Description

Measurements. Length: 4.1-4.4 mm; width: 1.65-1.80 mm. Ratios. Width head/pronotum: 1.21-1.23; width/length of pronotum: 1.28-1.30; width elytra/pronotum: 1.78-1.84; length/width of elytra: 1.41-1.45.

Colour. Either cupreous with greenish-purplish head and pronotum, or blackish-greenish with blackish-bluish head and pronotum, or completely bluish-blackish. Clypeus and labrum blackish, sometimes with faint greenish lustre. Antenna contrastingly black from 5th segment. Legs dark piceous to black, tibiae dark reddish.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather short, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with distinct transverse sulcus, complete surface coarsely striate. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons very coarsely and irregularly wrinkled, rugose. Frons between eyes with c. 10 coarse, markedly irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, impunctate. Whole upper surface of head rugose, moderately glossy. Antenna medium-sized, median segments c. 1.3-1.4 × as long as wide, in ♀ generally shorter and less contrastingly coloured, in ♂ longer and very contrastingly coloured.

Pronotum. Convex, rather wide, fairly trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost straight, in front of posterior angles not concave. Lateral triangular process distinct, rather small, triangular, laterally moderately projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with shallow, wide, transverse sulcus. Whole upper surface with dense, very coarse, very irregular transverse sulci. Surface without puncturation, without microreticulation, markedly rugose, moderately glossy.

Elytra. Rather elongate, but fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third somewhat excised. Apex wide, apical border oblique, gently convex. Surface completely and regularly striate. Foveae in third interval wide, though shallow, not contrasting. Surface rather uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores comparatively small, rather inconspicuous. Wings elongate.

Lower surface. Metepisternum c. 1.8-1.9 × as long as wide. Sternites with sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 6a-e). Genital ring somewhat deformed, asymmetric, large, fairly narrow, near apex distinctly sinuate. Apex moderately wide, turned to right, arms moderately wide. Aedeagus large, laterally fairly curved, asymmetric, very strongly bent, lower surface markedly concave, though near apex strongly convex, near apex suddenly widened to the left side and with a sharp edge. Apex rather short, markedly knob-like. Orificium fairly elongate. Parameres large, as in figs 6c,d.

♀ genitalia (Fig. 6f). Stylomere 2 fairly elongate, rather curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae fairly large. Apex of stylomere 1 with c. 3-4 elongate hairs. Lateral plate densely setose.

Variation. There is some variation in colouration and in rugosity of surface of head and pronotum, and also some sexual variation in contrast of colouration and length of antenna.

Distribution (Fig. 56). Eastern central Papua New Guinea.

Habits. Collected in medium altitude. Bell & Bell (1989) caught this species "running on disturbed soil".

Etymology. The name refers to the very rough surface of the pronotum.

Scopodes cuprascens, spec. nov.

Figs 7, 34, 56

Types. Holotype: ♂, Irian Jaya, Jayawijaya-Prov., Borne, 2000 m, 14.VIII.1992, leg. A. Riedel (ZSM-CBM).

Diagnosis. Large, elongate, brassy species with some cupreous lustre, very large, though not contrasting elytral foveae, distinct striation and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by dark legs, rather even surface of elytra, regular striation, and elongate antenna, the median segments of which are c. 1.5 × as long as wide.

Description

Measurements. Length: 4.3 mm; width: 1.8 mm. Ratios. Width head/pronotum: 1.21; width/length of pronotum: 1.3; width elytra/pronotum: 1.8; length/width of elytra: 1.41.

Colour. Brassy, head, pronotum, and elytra with some cupreous lustre. Labrum, and clypeus with faint greenish tint. Antenna black, 1st-4th segments dirty yellow, apex of 4th segment darkened. Legs piceous, tibiae dark reddish.

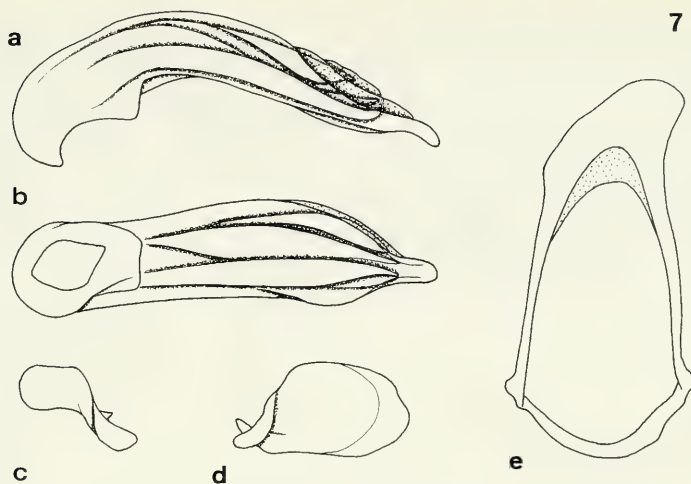


Fig. 7a-e. *Scopodes cuprascens*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum moderately elongate, rather wide, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part very coarsely striate, rugose, moderately glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons very coarsely and irregularly wrinkled, moderately glossy. Frons between eyes with c. 8 deep, markedly wavy, irregular sulci, reaching far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head strongly rugose, but moderately glossy. Antenna elongate, median segments c. $1.5 \times$ as long as wide.

Pronotum. Convex, rather wide, trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, triangular, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, almost invisibly transverse sulcus. Whole upper surface with very coarse, markedly irregular transverse sulci. Surface almost without puncturation, without microreticulation, very rugose, though fairly glossy.

Elytra. Moderately elongate, rather wide, but moderately convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third somewhat sinuate. Apex wide, apical border oblique, barely sinuate. Whole surface rather irregularly, more or less superficially striate. Foveae in third interval very wide, though shallow, not contrasting. Surface remarkably uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores moderately large and conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. $1.6 \times$ as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 7a-e). Genital ring deformed, asymmetric, large, fairly narrow. Apex wide, apically rounded, arms rather wide. Aedeagus large, fairly curved, asymmetric, lower surface almost straight, though near apex markedly sinuate, apex somewhat spoon-shaped. On left side of lower surface with sharp border. Orificium rather short. Parameres large, as in figs 7c,d.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 56). Eastern part of Irian Jaya. Known only from type locality.

Habits. Collected on open clayish ground in medium altitude.

Etymology. The name refers to the cupreous colour of the surface.

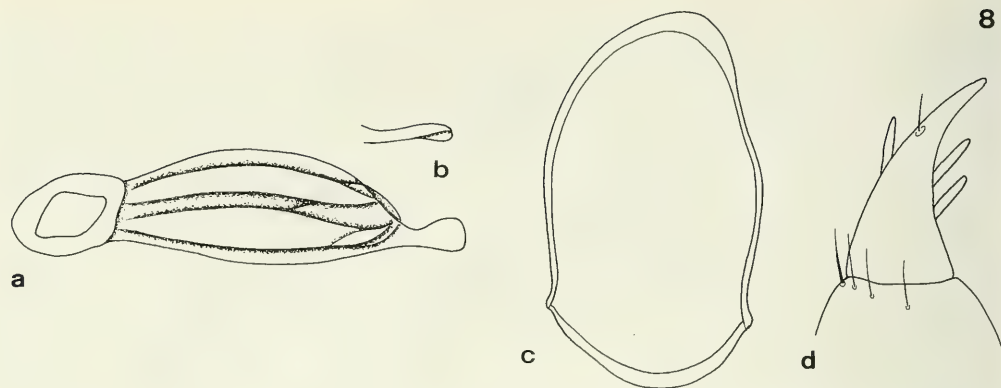


Fig. 8a-d. *Scopodes wei* Bell & Bell. ♂ and ♀ genitalia. a. Lower surface of aedeagus. b. Apex of aedeagus in lateral view. c. Genital ring. d. Stylomere 2.

Scopodes wei Bell & Bell

Figs 8, 57

Scopodes wei Bell & Bell, 1989, p 160.

Types. Holotype (not seen): ♂, PAPUA NEW GUINEA, Wau, Mt. Kaindi, 2,300 m, March 17, 1982, coll. R. & J. Bell, *Scopodes wei* Bell det. R. T. Bell (CMP). - Paratypes (seen): 4 ♂♂, 4 ♀♀, same data (ANIC, BMH, CBM, USNM).

Note. According to the original description there are about 70 further paratypes, distributed in several collections.

Diagnosis. Rather large, plain green or greenish-cupreous species with large, though shallow, not contrasting elytral foveae, distinct, though superficial striation, and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by light legs, very wide and large, coarsely sulcate pronotum, and the asymmetric, spatulate apex of the aedeagus.

Description

Note. Colour, aedeagus, and ♀ stylomere 2 of this species have been well described and also figured by Bell & Bell (1989). Hence only those characters not mentioned in the description or important for the comparison with other species are mentioned in the following short description. Only the ♂ genital ring and the ventral view of the aedeagus are herein figured, because the original description contains a fine picture of the habitus.

Measurements. Length: 4.1-4.3 mm (in description 4.0-5.0 mm); width: 1.8-1.9 mm. Ratios. Width head/pronotum: 1.12-1.14; width/length of pronotum: 1.28-1.32; width elytra/pronotum: 1.78-1.80; length/width of elytra: 1.33-1.35.

Colour. Green with base and apex of pronotum and suture of elytra cupreous, or wholly cupreous. Labrum and clypeus greenish. Antenna piceous, 1st-4th segments dirty yellow, outer segments becoming gradually darker. Legs yellow, knees and tarsi slightly infusate.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather short and wide, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part coarsely striate, rugose, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons strongly wrinkled, moderately glossy. Frons between eyes with c. 10 deep, rather straight, though sometimes somewhat irregular sulci, reaching far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head moderately rugose, fairly glossy. Antenna moderately short, median segments c. 1.3-1.4 × as long as wide.

Pronotum. Convex, very large, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posterior of triangular process almost

straight to slightly convex, in front of posterior angles not concave. Lateral triangular process very small, triangular, laterally barely projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. Sulcus in apical third not visible. Whole upper surface with dense, very coarse, extremely irregular transverse sulci. Surface without puncturation, without microreticulation, very rugose, rather glossy.

Elytra. Short and wide, depressed. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third conspicuously sinuate. Apex wide, apical border oblique, barely sinuate. Whole surface distinctly, though superficially and somewhat irregularly striate. Foveae in third interval moderately wide, very shallow, not contrasting. Surface moderately uneven. Microreticulation conspicuous, consisting of very dense, transverse meshes that are rather irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores rather small, fairly inconspicuous. Wings rather elongate.

Lower surface. Metepisternum c. 1.7-1.8 × as long as wide. Sternites with rather sparse, short pilosity, with distinct microreticulation.

♂ genitalia (Figs 8a-c). Genital ring barely deformed, only slightly asymmetric, large, wide, markedly widened in middle. Apex wide, rounded off, arms narrow. Aedeagus large, fairly curved, highly asymmetric, lower surface almost straight, apex elongate, remarkably spatulate, asymmetric.

♀ genitalia (Fig. 8d). Stylocere 2 narrow and elongate, rather curved, with dorsal ensiform and nematiform seta. Both ventral and dorsal ensiform setae narrow and elongate. Apex of stylocere 1 with c. 4 elongate hairs. Lateral plate densely setose.

Variation. Some variation noted only in colour.

Distribution (Fig. 57). Eastern central Papua New Guinea. Known only from type locality.

Habits. According to Bell & Bell (1989) this species was “found running on disturbed soil”, in median altitude.

Additional material examined (1): 1♂, NEW GUINEA: NE Mt. Kaindi, 2350 m 29.III.1968; P. Colman Collector BISHOP; *Scopodes tafa* Darlington det. G. E. Ball, 1989 (BMH).

Scopodes tafa Darlington

Figs 9, 35 58

Scopodes tafa Darlington, 1968, p. 199; Bell & Bell 1989, p. 158.

Types. Holotype (not seen): ♀, PAPUA: Mt. Tafa, 8,500 ft.II.1934. L. E. Cheesman. B.M. 1934-244 (BMNH). - Paratypes: 2♀ ♀, same data, M.C.Z. Paratype 31498, Paratype *Scopodes tafa* Darl. (MCZ).

Diagnosis. Small, brassy species with greenish or purplish lustre, distinct striation and sericeous microreticulation of elytra and very large, contrasting elytral foveae. Further distinguished from related species by yellow legs, short, almost completely yellow antenna, few (c. 5-6) frontal sulci, small size, and simple apex of aedeagus.

Description

Measurements. Length: 3.40-3.65 mm; width: 1.48-1.55 mm. Ratios. Width head/pronotum: 1.19-1.22; width/length of pronotum: 1.31-1.33; width elytra/pronotum: 1.76-1.78; length/width of elytra: 1.30-1.32.

Colour. Brassy with greenish or purplish lustre, or greenish with bronzed spots on Elytra. Foveae on 3rd interval blue at bottom. Labrum and clypeus black with slight greenish lustre. Antenna yellowish throughout. Legs yellow or light reddish, only tarsi infuscated.

Head. Eyes very large, space between inner border of eyes almost as wide as diameter of eye. Labrum moderately elongate, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part with some elongate striae, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons almost completely glossy. Frons between eyes with c. 6 deep and coarse, slightly crenulate sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather rugose, but fairly glossy. Antenna short and small, median segments about as long as wide.

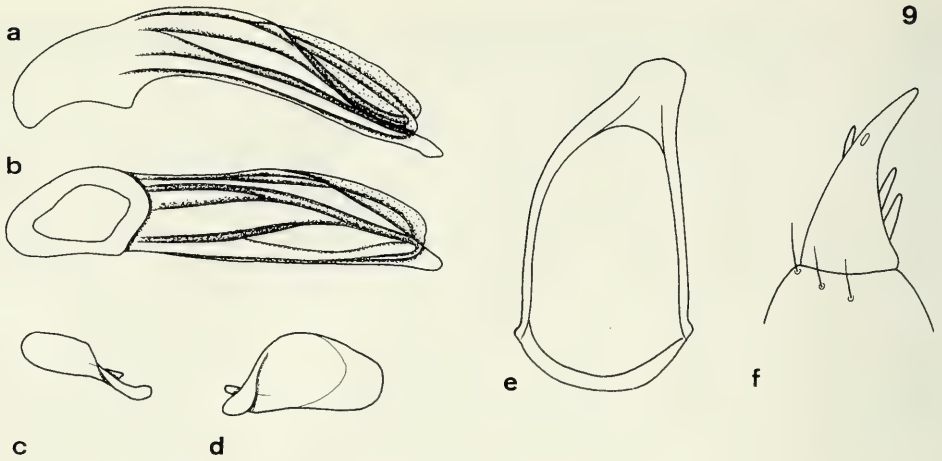


Fig. 9a-f. *Scopodes tafa* Darlington. ♂ and ♀ genitalia. For legends see Fig. 2.

Pronotum. Convex, rather wide, trapezoidal, widest at triangular lateral process in anterior third. Lateral border line distinct. Margin anteriorly slightly convex, posteriorly of triangular process straight, in front of posterior angles barely concave. Lateral process distinct, rather large, triangular, laterally rather projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, deep, not reaching apex nor base. Without distinct transverse sulcus in apical third. Whole upper surface with very coarse, anteriorly markedly irregular, wavy, more or less transverse sulci. Surface almost without puncturation, without microreticulation, rugose, though glossy.

Elytra. Short and wide, fairly convex. Base comparatively narrow, therefore elytra posteriorly distinctly widened. Sides gently rounded, in anterior third distinctly sinuate. Apex very wide, apical border oblique, straight. Whole surface rather irregularly, more or less superficially striate. Foveae in third interval very wide, fairly deep, moderately contrasting. Surface rather uneven. Microreticulation conspicuous, consisting of dense, very transverse meshes that are remarkably irregular around the discal foveae. Surface with some sericeous lustre. Pilosity very sparse and short. Marginal pores rather large, but only moderately conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. $1.6 \times$ as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 9a-e). Genital ring little deformed, slightly asymmetric, rather narrow, basally almost parallel. Apex rather short, fairly narrow, apically rounded, arms slender. Aedeagus large, slightly curved, slightly widened in middle, lower surface very gently convex, apex narrow, moderately projecting, straight. Orificium rather short. Parameres rather large, as in figs 9c,d.

♀ genitalia (Fig. 9f). Stylomere 2 elongate, moderately curved, with dorsal ensiform seta, but nematiform seta absent in two examined specimens. Ventral ensiform setae medium-sized. Apex of stylomere 1 with c. 2-3 elongate hairs. Lateral plate densely setose.

Variation. Only some variation in general colour noted.

Distribution (Fig. 58). Eastern Papua New Guinea. Known only from a rather localized area around Wau.

Habits. Little known. According to Bell & Bell (1989) specimens were found "running on disturbed soil".

Additional material examined (3): 1♂, PAPUA NEW GUINEA Wau-Mt. Missim Apr.2-3.1982 Coll. R.& J. Bell 1980-2000 m, *Scopodes tafa* det. R. T. Bell (UVB); 1♂, PAPUA NEW GUINEA Wau-Mt. Kaindi, 2300 m, Mar.17.1982 Coll. R.&J. Bell, *Scopodes tafa* det. R. T. Bell (UVB); 1♀, NEW GUINEA: NE, Okapa, Okasa, 1400-1600 m, 17.I.1966, J. Sedlacek Collector BISHOP MUS., *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH).

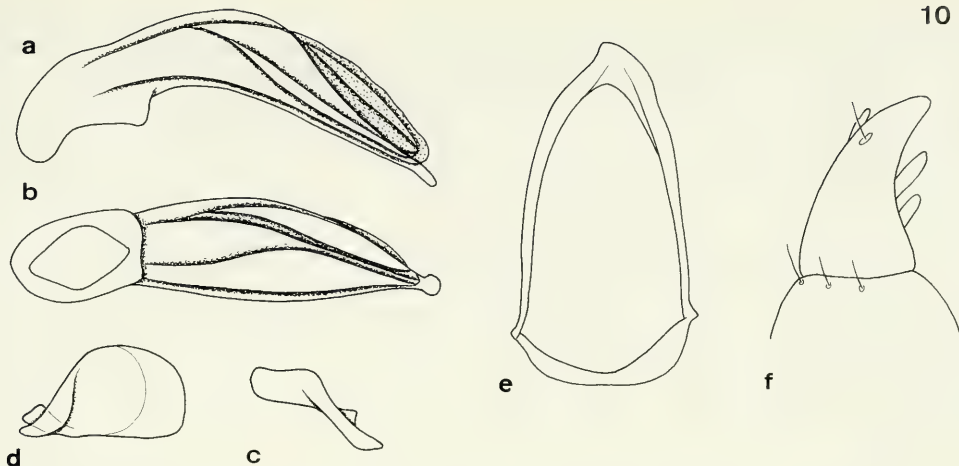


Fig. 10a-f. *Scopodes viridiaeneus*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Scopodes viridiaeneus, spec. nov.

Figs 10, 36, 59

Types. Holotype: 1♂, NEW GUINEA: NE, Mt. Missim 1440 m, 24.4.1968, J. Sedlacek Collector BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH). - Paratypes: 1♂, NEW GUINEA: NE, Mt. Misim, m 196, J. Sedlacek Collector BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 1♂, NEW GUINEA: NE, Wau, 2400 m, 9-12.1.1962, J. Sedlacek Collector BISHOP, *Scopodes cf. tafa* Darl. (CBM); 1♂, NEW GUINEA: SE, Murray Pass, Waitape, 2800-2900 m, 11.XI.65, J. H. & M. Sedlacek, G. Monteith & Native BISHOP MUSEUM; J. & M. Sedlacek Collectors BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 1♀, NG, Murray P. 2800 m, 5.XI.1965, J. & M. Sedlacek Collectors BISHOP, Mt. Albert Edward received Dec. 65, *Scopodes cf. tafa* Darl. (CBM); 1♀, NEW GUINEA: NE, longai, 10 km E of Mt. Albert Edward, 1450 m, 7.XI.1965, J. & M. Sedlacek Collectors BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 1♀, NEW GUINEA: NE, Mt. Kaindi, 2100-2300 m, 1.I.1965, J. Sedlacek Collector BISHOP MUS., *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 1♀, Bulldog Rd. 31.5. 2400 m, WAU, BULLDOG Rd. 2400 m, 31.5.62, J. & M. Sedlacek Collectors BISHOP, *Scopodes tafa* Darl. det. Darlington '66 (BMH); 1♀, N. Guinea: NE Bulldog Rd. 2700-2800 m, 40 km S. Wau, 22.-31.V.1969, J. Sedlacek Collector BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH);

Diagnosis. Medium-sized to rather large, cupreous species with greenish head and pronotum, or completely aeneocupreous, with very large, moderately contrastingly blue elytral foveae, fairly distinct striation and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by yellow legs, apically moderately darkened antenna, and from most closely related *S. foveipennis*, spec. nov. by colour, less bright colouration of elytral foveae, and knob-like apex of aedeagus.

Description

Measurements. Length: 3.85-4.40 mm; width: 1.70-1.95 mm. Ratios. Width head/pronotum: 1.18-1.24; width/length of pronotum: 1.29-1.38; width elytra/pronotum: 1.82-1.88; length/width of elytra: 1.32-1.39.

Colour. Either cupreous with greenish head and pronotum, or completely aeneocupreous, elytra with conspicuous sericeous pattern. Discal and lateral foveae of elytra more or less conspicuously blue. Labrum usually blackish, clypeus with more or less distinct greenish or purplish lustre. Antenna light brown, 1st-4th segments yellow, moderately contrasting. Legs yellow, tarsi piceous.

Head. Eyes very large, space between inner border of eyes slightly wider than diameter of eye. Labrum moderately elongate, anterior border moderately convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part rather regularly striate, fairly glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons more or less coarsely wrinkled, rather glossy. Frons between eyes with 9-10 deep, rather regular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head fairly rugose, but moderately glossy. Antenna large, but rather short, median segments c. 1.2 × as long as wide.

Pronotum. Convex, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly feebly convex to almost straight, posteriorly of triangular process straight or even very faintly concave, in front of posterior angles not concave. Lateral triangular process distinct, rather large, laterally rather projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, transverse sulcus. Whole upper surface with coarse, rather irregular transverse sulci. Surface almost without puncturation, without microreticulation, rugose, though fairly glossy.

Elytra. Rather short and wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third conspicuously sinuate. Apex wide, apical border oblique and slightly sinuate. Surface more or less completely, rather irregularly, rather superficially striate. Foveae in third interval very wide, though rather shallow, rather contrasting. Surface uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores rather large and conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. 1.6-1.7 × as long as wide. Sternites with rather sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 10a-e). Genital ring little deformed, barely asymmetric, fairly narrow, rather convex. Apex short, fairly wide, apically rounded, arms rather slender. Aedeagus large, barely curved, in middle gently widened, almost symmetric, lower surface almost straight, apex narrow, small, slightly knob-shaped. Orificium moderately elongate. Parameres rather large, as in figs 10c,d.

♀ genitalia (Fig. 10f). Stylocere 2 rather short and wide, curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae large. Apex of stylocere 1 with c. 3 elongate hairs. Lateral plate rather densely setose.

Variation. Some variation noted in size, colouration, relative length of elytra, and degree of striation of elytra.

Distribution (Fig. 59). Central eastern Papua New Guinea.

Habits. Collected in medium altitude.

Etymology. The name refers to the greenish-bronzed colour of most specimens.

Scopodes foveipennis, spec. nov.

Figs 11, 37, 60

Types. Holotype: ♂, IR 13, Irian Jaya, Jayawijaya-Prov., S. Borneo, 1750 m, 14.VIII.1992, leg. Balke (ZSM). - Paratypes: 1♂, Irian Jaya, Jayawijaya-Prov., Borneo, 2000 m, 14.VIII.1992, leg. A. Riedel (CBM); 1♂, Irian Jaya, Jayawijaya-Prov., Bommela, 1750 m, 30.VIII.-1.IX.1992, leg. A. Riedel (CBM); 1♀, NEW GUINEA: NW Vogelkop: Sururai SW of Lake Anggi Giji, + 2000-2100 m, 4.-5.III.1963, R. Straatman Collector BISHOP, *Scopodes* cf. *tafa* Darl. (BMH); 1♀, NEW GUINEA: NE, E. Highlands, 10 km NE of Lufa, 1800-2100 m, 21.I.1966, J. & M. Sedlacek Collectors BISHOP, *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 1♀, N. GUINEA: NE, Kaindi-Nami, 1700 m, 22.8.68, J. Sedlacek Collector BISHOP MUS., *Scopodes tafa* Darlington det. G. E. Ball 1989 (BMH); 3♂♂, 2♀♀, PAPUA NEW GUINEA Wau-Mt. Kaindi, 2300 m, Feb.15, Mar.8, Mar.17,1982 Coll. R.&J. Bell, *Scopodes tafa* det. R. T. Bell (UVB).

Diagnosis. Medium-sized to rather large, bright green species with very large, bright blue elytral foveae, distinct striation and transverse, sericeous microreticulation of Elytra. Further distinguished from related species by yellow legs and apically abruptly darkened antenna, and from most closely related *S. viridiaeneus*, spec. nov. by colour, brighter colouration of elytral spots, and not knob-like apex of aedeagus.

Description

Measurements. Length: 3.95-4.18 mm; width: 1.65-1.72 mm. Ratios. Width head/pronotum: 1.21-1.27; width/length of pronotum: 1.25-1.30; width elytra/pronotum: 1.79-1.82; length/width of elytra: 1.37-1.40.

Colour. Bright green, elytra with conspicuous sericeous pattern. Discal and lateral foveae of elytra conspicuously blue. Apex of pronotum and base of elytra with some purple tint. Labrum and clypeus black with more or less distinct greenish lustre. Antenna piceous, 1st-4th segments yellow. Legs yellow, tarsi piceous.

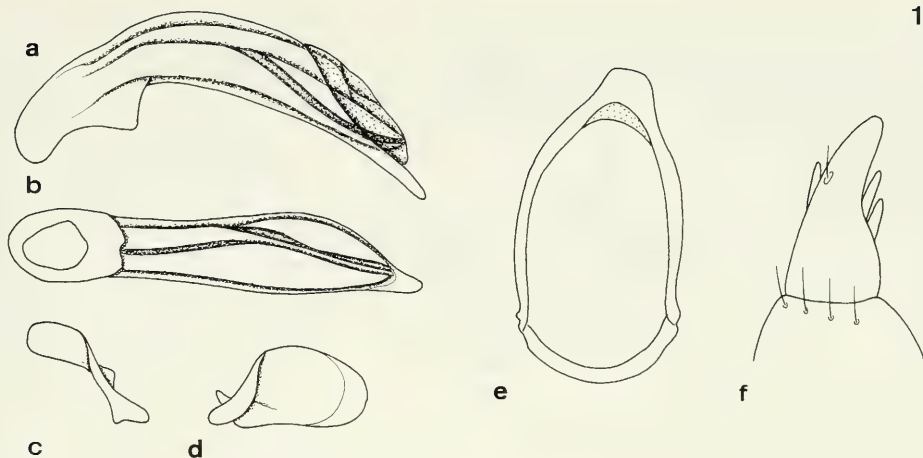


Fig. 11a-f. *Scopodes foveipennis*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Head. Eyes very large, though space between inner border of eyes slightly wider than diameter of eye. Labrum rather short and wide, anterior border moderately convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part irregularly striate, uneven, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons coarsely and irregularly wrinkled, sometimes in middle with glossy, triangular area, rather glossy. Frons between eyes with 9-10 deep, rather irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather rugose, but moderately glossy. Antenna large, moderately elongate, median segments c. $1.2 \times$ as long as wide.

Pronotum. Convex, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly feebly convex to almost straight, posteriorly of triangular process straight, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, laterally rather projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, almost invisibly transverse sulcus. Whole upper surface with dense and coarse, posteriorly fairly regular transverse sulci. Surface almost without puncturation, without microreticulation, rather glossy.

Elytra. Moderately short and wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third conspicuously sinuate. Apex wide, apical border oblique and slightly sinuate. Whole surface rather irregularly, more or less superficially striate. Foveae in third interval very wide, though rather shallow, highly contrasting. Surface remarkably uneven. Microreticulation conspicuous, though rather superficial, consisting of very dense, extremely transverse meshes that are remarkably irregular around the discal foveae. Surface with conspicuous, sericeous lustre. Pilosity very sparse and short. Marginal pores rather large and conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. $1.6-1.7 \times$ as long as wide. Sternites with rather sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 11a-e). Genital ring little deformed, barely asymmetric, fairly wide, rather convex. Apex short, fairly wide, apically rounded, arms rather slender. Aedeagus large, fairly curved, anteriorly suddenly widened, lower surface very gently curved, apex narrow, projecting, depressed, straight. Orificium rather short. Parameres rather large, as in figs 11c,d.

♀ genitalia (Fig. 11f). Stylomere 2 rather short laterally suddenly widened halfway, little curved, with dorsal ensiform, but nematiform seta lacking in the unique ♀, although a groove is present. Apex of stylomere 1 with 3-4 elongate hairs. Lateral plate rather densely setose.

Variation. The species shows some geographical variation, because the eastern specimens possess a perceptibly wider and more densely and irregularly striolate pronotum than the specimens from Irian

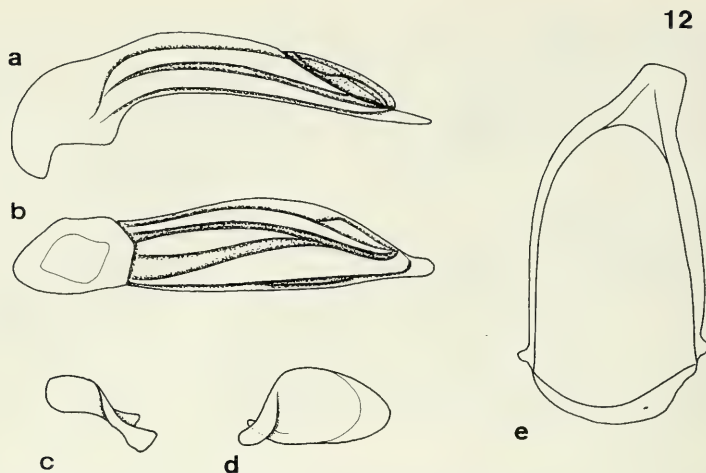


Fig. 12a-e. *Scopodes reticulatus*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Jaya. At present, however, these differences are not yet regarded as sufficient for the distinction of nomenclatorial valuable taxa, e.g. subspecies.

Distribution (Fig. 60). Vogelkop, western Irian Jaya, eastern central Irian Jaya, and eastern central Papua New Guinea.

Habits. Collected on open clayish ground in medium altitudes. Bell & Bell (1989) collected this species "running on disturbed soil".

Etymology. The name refers to the conspicuous elytral foveae.

***Scopodes reticulatus*, spec. nov.**

Figs 12, 38, 57

Types. Holotype: 1♂, Irian Jaya, Jayawijaya-Prov., Larye nr. Langda, 2200-2600 m, 26.VIII.1992, leg. A. Riedel (ZSM-CBM).

Diagnosis. Medium-sized, bronzed species with very large, bright blue elytral foveae, distinct striation and sericeous microreticulation of Elytra. Further distinguished from related species by completely yellow legs, posteriorly dark antenna, and coarse, almost isodiametric microreticulation.

Description

Measurements. Length: 3.95 mm; width: 1.6 mm. Ratios. Width head/pronotum: 1.22; width/length of pronotum: 1.31; width elytra/pronotum: 1.78; length/width of elytra: 1.43.

Colour. Bronze, surface with faint cupreous lustre, discal and marginal pores of elytra bright blue. Labrum black, clypeus with greenish-cupreous lustre. Antenna piceous, 1st-4th segments and part of 5th segment yellow. Legs dirty yellow, tarsi piceous.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum moderately elongate, gently triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part with some elongate striae, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons with some coarse wrinkles, but in part glossy. Frons between eyes with c. 8-10 deep, markedly irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather rugose, but fairly glossy. Antenna rather short, median segments c. 1.1 × as long as wide.

Pronotum. Convex, moderately wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly slightly convex, posteriorly of triangular

process even slightly concave, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, triangular, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. Without distinct transverse sulcus in apical third. Whole upper surface with very coarse, markedly irregular, wavy, more or less transverse sulci. Surface almost without puncturation, without microreticulation, rugose, though glossy.

Elytra. Moderately elongate, rather wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third distinctly sinuate. Apex wide, apical border oblique, rather concave. Whole surface rather irregularly, more or less superficially striate. Foveae in third interval very wide, fairly deep, very contrasting. Surface rather uneven. Microreticulation coarse and very conspicuous, consisting of dense, almost isodiametric to slightly transverse meshes that are remarkably irregular around the discal foveae. Surface with some sericeous lustre. Pilosity very sparse and short. Marginal pores rather large and very conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. $1.6 \times$ as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 12a-e). Genital ring moderately deformed, slightly asymmetric, large, fairly wide. Apex rather wide, apically rectangular, arms rather wide, rather parallel. Aedeagus medium-sized, depressed, gently curved, moderately asymmetric, lower surface straight, apex depressed, slightly projecting, wide at tip. Orificium rather short. Parameres fairly large, as in figs 12c,d.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 57). Eastern part of Irian Jaya.

Habits. Collected apparently on clayish ground in medium altitude.

Etymology. The name refers to the markedly reticulate surface of the elytra.

Scopodes wilsoni Darlington

Figs 13, 39, 61

Scopodes wilsoni Darlington, 1968, p. 200.

Scopodes simplex Darlington, 1968, p. 201 (pro parte).

Scopodes aereus, nom. nov. for *Scopodes simplex* Darlington, 1968, not *Scopodes simplex* Blackburn, 1894 (**syn. nov.**).

Types. Holotype: ♂, Nganduo to Yunzain, IV-6-55, 10-1500 M., Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson, M.C.Z. Holotype 31500 (MCZ). - Paratype: 1♂, Nadzab, Markham R. val. N. Guinea 13 July 1944 K. V. Kronbein, E. fork Ngafir Cr. 1000-3000 ft native trail, Ex Colln K V Kronbein USNM, Paratype *Scopodes wilsoni* Darl. (USNM); 1♀, NG, Wau, 1350 m, 10.XII.61, J. & M. Sedlacek Collectors BISHOP, Paratype *Scopodes wilsoni* Darl. (BMH).

Note. The taxonomical and nomenclatorial situation in *Scopodes wilsoni* is rather complex. Two of the four paratypes of *S. wilsoni* seen by me belong to *S. darlingtoni* (nom. nov. for preoccupied *S. basalis* Darlington) and the same may be true for other paratypes and additional material not available for examination now. At the same time *S. aereus* (nom. nov. for preoccupied *S. simplex* Darlington) is synonymous with *S. wilsoni*, the synonymy being confirmed by examination of the ♂ genitalia. But, on the other hand, only the eastern specimens of the type series of *S. simplex* (holotype and four paratypes) belong to *S. wilsoni*, while those paratypes from Irian Jaya belong to another, new species, namely *S. robustus*, spec. nov.

Diagnosis. Medium-sized, bronze-black species with greenish lustre, dark legs, rather large, not contrasting elytral foveae, and fairly distinct microreticulation of Elytra. Further distinguished from related species by gradually darkened antenna, distinct oblique impression in anterior third of elytra, and markedly convex lower surface, but not knob-like apex of aedeagus.

Description

Measurements. Length: 3.85-3.95 mm; width: 1.65-1.70 mm. Ratios. Width head/pronotum: 1.25-1.27; width/length of pronotum: 1.23-1.25; width elytra/pronotum: 1.87-1.91; length/width of elytra: 1.33-1.34.

Colour. Bronze-black, head and pronotum with greenish lustre, head between eyes and pronotum on

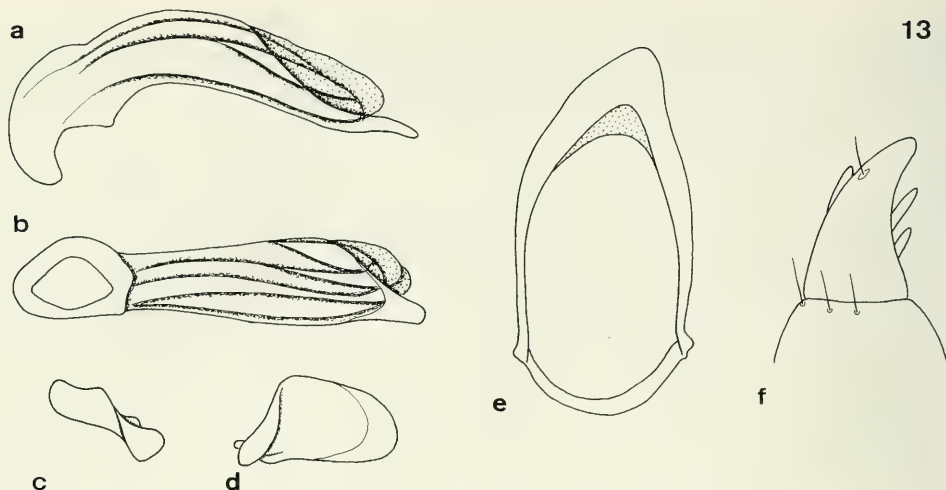


Fig. 13a-f. *Scopodes wilsoni* Darlington. ♂ and ♀ genitalia. For legends see Fig. 2.

disk with purplish tinge. Labrum and clypeus either black, either with greenish or purplish tinge. Elytral foveae not contrasting. 1st-4th segments of antenna reddish-yellowish, rest dark, but gradually darkened, not sharply contrasting. Legs black, tibia dark reddish.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather elongate, triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, surface usually rather densely striate or wrinkled, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons more or less densely and coarsely wrinkled. Frons between eyes with c. 8 deep, slightly irregular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head fairly glossy. Antenna rather short, median segments c. 1.1-1.2 × as long as wide, apical segments of antenna becoming distinctly larger.

Pronotum. Convex, moderately wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly slightly convex, posteriorly of triangular process almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, markedly triangular, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. With faint transverse sulcus in apical third. Upper surface posteriorly of sulcus with fairly superficial and shallow, rather irregular, transverse sulci. Surface with distinct, though sparse puncturation, without microreticulation, rather glossy.

Elytra. Moderately elongate, rather wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third markedly sinuate. Disk with an oblique sulcus running from medio-anteriorly to latero-posteriorly. Apex wide, apical border oblique, barely concave. Surface either distinctly, though rather irregularly striate or almost non-striate. Foveae in third interval fairly large and deep, though not contrasting. Surface rather uneven. Microreticulation dense and distinct, though superficial, consisting of dense, moderately transverse meshes that are rather irregular around the discal foveae. Surface fairly glossy. Pilosity very sparse and short. Marginal pores fairly large and moderately conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. 1.6-1.7 × as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 13a-e). Genital ring moderately deformed, only feebly asymmetric, large, fairly wide. Apex elongate, tapering, arms moderately wide. Aedeagus medium-sized, depressed, rather curved, moderately asymmetric, lower surface almost straight, near apex slightly concave, apex elongate, depressed, projecting. Orificium rather short. Parameres fairly large, as in figs 13c,d.

♀ genitalia (Fig. 13f). Stylomere 2 rather short and wide, fairly curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae rather elongate. Apex of stylomere 1 with c. 3 elongate hairs. Lateral plate densely setose.

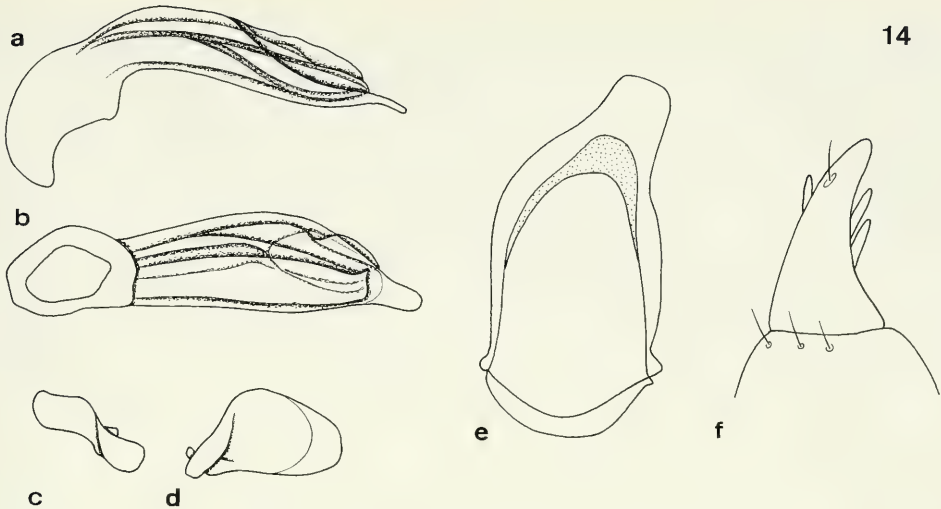


Fig. 14a-f. *Scopodes atricornis*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Variation. There is considerable variation in degree of striation of elytra, since the holotype of *S. wilsoni* is rather completely and fairly deeply striate, while the holotype of *S. areus* (= *S. simplex*) is virtually not, though the ♂ genitalia are identical and both specimens have been collected at the same locality.

Distribution (Fig. 61). Huon Peninsula and vicinity of Wau, northeastern and central eastern Papua New Guinea.

Habits. Largely unknown, though single specimens have been collected down to sea level.

Additional material examined (5): 1♂, Nganduo to Yunzain, IV-6-55, 10-1500 M., Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson, M.C.Z. Holotype 31502, Holotype *Scopodes simplex* Darl. (MCZ); 1♂, 1♀, same data, Paratypes *Scopodes simplex* Darl. (MCZ); 1♂, Gemeheng Apr. 11/13-55. 300 M, Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson, M.C.Z. Paratype 31502, Paratype *Scopodes simplex* Darl. (MCZ); 1♀, vic. Nadzab, Brit. N.G. July 1944 Darlington, M.C.Z. Paratype 31502, Paratype *Scopodes simplex* Darl. (MCZ).

Scopodes atricornis, spec. nov.

Figs 14, 40, 57

Types. Holotype: ♂, Irian Jaya, Jayawijaya-Prov., Nalca, 1900-2100 m, 8.IX.1992, leg. A. Riedel (ZSM). - Paratypes: 15♂♂, 6♀♀, same data (BMH, CBM, MCZ, UVB); 1♀, Irian Jaya, Jayawijaya-Prov., Bommela, 1750 m, 30.VIII-1.IX.1992, leg. A. Riedel (CBM); 1♂, Irian Jaya, Jayawijaya-Prov., Kono-Pini, 2400-2800 m, 20.IX.1992, leg. A. Riedel (CBM); 1♂, Irian Jaya, Jayawijaya-Prov., Borne, 2000 m, 14.VIII.1992, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya-Prov., Tanime-Bime, 1600-2200 m, 23.IX.1993, leg. A. Riedel (CBM); 1♂, Irian Jaya, Manokwari-Prov., Tetahore, Iranmeba, c. 1200 m, 23.III.1993, leg. A. Riedel (CBM).

Diagnosis. Medium-sized, bronze-black species with greenish or cupreous lustre, dark legs, rather large, not contrasting elytral foveae, distinct striation and rather distinct microreticulation of Elytra. Further distinguished from related species by antenna contrastingly darkened from 5th segment, absence of an oblique impression in anterior third of elytra, and markedly convex lower surface, but not knob-like apex of aedeagus.

Description

Measurements. Length: 3.55-4.0 mm; width: 1.48-1.72 mm. Ratios. Width head/pronotum: 1.16-1.20; width/length of pronotum: 1.25-1.31; width elytra/pronotum: 1.76-1.84; length/width of elytra: 1.33-1.36.

Colour. Bronze-black, head and pronotum most often with more or less distinct greenish or purplish or cupreous lustre, elytra sometimes with faint cupreous tinge. Labrum and clypeus either black, either with greenish or purplish tinge. Elytral foveae not contrasting. Antenna black, 1st segment reddish, 2nd-

4th segments dirty yellow, very contrasting. Legs black, tibia dark reddish.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather elongate, triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, surface usually markedly and coarsely striate or wrinkled, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons usually densely and coarsely wrinkled. Frons between eyes with c. 7-8 deep, irregular and markedly wavy sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather rugose, but fairly glossy. Antenna rather short, median segments c. 1.1-1.2 × as long as wide, apical segments of antenna conspicuously widened.

Pronotum. Convex, moderately wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly slightly convex, posteriorly of triangular process almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, markedly triangular, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. Without distinct or with very faint transverse sulcus in apical third. Whole upper surface with very coarse and dense, rather irregular, transverse sulci. Surface almost without puncturation, without microreticulation, rugose, though fairly glossy.

Elytra. Moderately elongate, rather wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third fairly sinuate. Apex wide, apical border oblique, barely concave. Whole surface distinctly, though rather irregularly striate. Foveae in third interval rather large and deep, though not contrasting. Surface fairly uneven. Microreticulation dense and distinct, though somewhat superficial, consisting of dense, very transverse meshes that are remarkably irregular around the discal foveae. Surface fairly glossy. Pilosity very sparse and short. Marginal pores rather large and moderately conspicuous. Wings rather elongate.

Lower surface. Metepisternum c. 1.6-1.7 × as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 14a-e). Genital ring rather deformed, asymmetric, large, fairly wide. Apex wide and elongate, apically almost rectangular, arms wide. Aedeagus medium-sized, depressed, rather curved, moderately asymmetric, lower surface convex, near apex slightly concave, apex depressed, projecting, wide. Orificium rather short. Parameres fairly large, as in figs 14c,d.

♀ genitalia (Fig. 14f). Stylomere 2 fairly elongate, little curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae elongate. Apex of stylomere 1 with c. 3-4 elongate hairs. Lateral plate densely setose.

Variation. Some variation noted in degree and colour of metallic lustre, further in degree of striation of clypeus and in density of transverse sulci of Pronotum. There is one ♀ specimen with unusually smooth frontal and pronotal sulci and wide, laterally deeply excised, rather glossy elytra with extraordinarily transverse microreticulation. It is uncertain, whether this is a separate taxon, because any decision will be not possible, until similarly structured ♂♂ are at hand.

Distribution (Fig. 57). Western (Vogelkop) and central eastern Irian Jaya.

Habits. The species was collected generally in medium altitude, two specimens on clayish ground.

Etymology. The name refers to the contrastingly dark apical segments of the antenna.

Scopodes darlingtoni, nom. nov.

Figs 15, 41, 62

Scopodes basalis Darlington, 1968, p. 200.

Scopodes darlingtoni, nom. nov. for *Scopodes basalis* Darlington, 1968, not *Scopodes basalis* Broun, 1903.

Scopodes wilsoni Darlington, 1968, p. 200 (pro parte).

Types. Holotype: ♂, Joangeng, Apr. 7/8-55, 500 M; Mongi Watershed, Huon Pen. N. GUINEA, E. O. Wilson, M.C.Z. Holotype 31501, Holotype *Scopodes basalis* Darl. (MCZ). - Paratypes: 1 ♂, New Guinea Stevens, Morobe Dist. Mt. Misim, 6400 ft., M.C.Z. Paratype 31501, Paratype *Scopodes basalis* Darl. (MCZ); 1 ♀, Saruwaged Ra. upper Bunbok Valley, NG 2300-3200 M, V (29-30)-1955, EO Wilson, mossy forest, M.C.Z. Paratype 31501, Paratype *Scopodes basalis* Darl. (MCZ); 1 ♀ (defect, head and prothorax missing), NEW GUINEA: NE. Toricelli Mts. Siaute, sea lev. XI-9-17-1958, W. W. Brandt Collector BISHOP, Paratype *Scopodes basalis* Darl. (BMH).

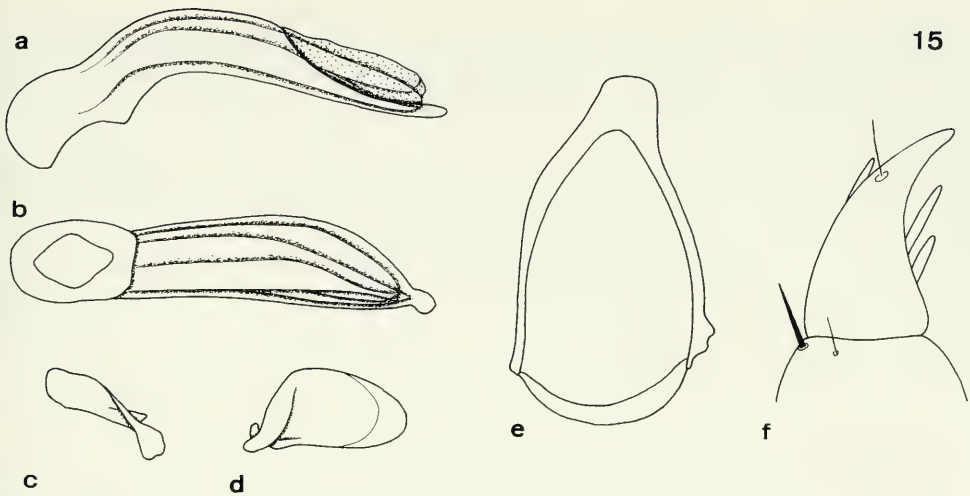


Fig. 15a-f. *Scopodes darlingtoni*, nom. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Note. The name *Scopodes basalis* Darlington, 1968 is preoccupied by *Scopodes basalis* Broun, 1903, a species from New Zealand.

Two paratypes of the type series of *S. wilsoni* belong to this species, one of which has been collected exactly at the same locality together with a paratype of *S. darlingtoni* (Morobe Dist. Mt. Misim).

Diagnosis. Small, bronze-black to greenish species with dark legs, rather large, not contrasting elytral foveae, feeble striation at base of elytra only, and rather superficial microreticulation of Elytra. Further distinguished from related species by absence of an oblique impression in anterior third of elytra and by knob-like apex of aedeagus.

Description

Measurements. Length: 3.10-3.50 mm; width: 1.3-1.5 mm. Ratios. Width head/pronotum: 1.19-1.22; width/length of pronotum: 1.29-1.33; width elytra/pronotum: 1.74-1.82; length/width of elytra: 1.24-1.31.

Colour. Bronze-black to greenish, head and pronotum with dark greenish or purplish lustre, elytra with more or less distinct metallic tinge. Labrum and clypeus black. Antenna piceous, 2nd-4th segments light reddish. Legs dark piceous, tibiae dark reddish.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather elongate, triangular, anterior border fairly convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part faintly striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons faintly wrinkled and/or slightly punctate, glossy. Frons between eyes with c. 8-9 deep, rather irregular sulci that reach far posteriorly. Summit and neck wrinkled, apparently impunctate. Whole upper surface of head glossy. Antenna short, median segments about as long as wide.

Pronotum. Very convex, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posteriorly of triangular process almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, medium sized, obtusely triangular, laterally but moderately projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, barely visible transverse sulcus. Posteriorly of transverse sulcus with coarse, irregular transverse sulci. Surface anteriorly with some puncturation, without microreticulation, fairly rugose, though glossy.

Elytra. Short and wide, very convex. Base very wide, therefore elytra almost rectangular. Sides barely rounded, in anterior third somewhat sinuate. Apex wide, apical border oblique, barely sinuate. At base with rather distinct striation, sometimes whole surface with traces of striation. Foveae in third interval wide and

deep, though not contrasting. Microreticulation more or less conspicuous, superficial, consisting of fairly large, almost isodiametric meshes, or even barely visible. Surface rather glossy. Pilosity extremely sparse and short, almost invisible. Marginal pores large and conspicuous. Wings moderately elongate.

Lower surface. Metepisternum c. $1.5 \times$ as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 15a-e). Genital ring not much deformed, rather symmetric, large and wide. Apex rather wide, rectangular, arms rather narrow. Aedeagus medium-sized, gently curved, barely asymmetric, lower surface almost straight, near apex slightly convex, apex knob-like, though depressed. Orificium rather short. Parameres fairly elongate, as in figs 15c,d.

♀ genitalia (Fig. 15f). Stylomere 2 fairly elongate, apex acute, rather curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae elongate. Apex of stylomere 1 with c. 2-3 elongate hairs, the lateral one stout. Lateral plate densely setose.

Variation. There is considerably variation in colouration, as some specimens are fairly green, others mostly blackish-bronzed, and in degree of striation and of microreticulation of elytra.

Distribution (Fig. 62). Southeastern, central-eastern and northeastern Papua New Guinea.

Habits. Largely unknown, though single specimens have been collected almost at sea level. Two specimens collected at Wau in a coffee plantation in medium altitude.

Additional material examined (7): 1♂, New Guinea Stevens, Morobe Dist. Mt. Misim, 6400 ft., M.C.Z. Paratype 31500, Paratype *Scopodes wilsoni* Darl. (MCZ); 1♂, NG, Wau, Nami Ck. 1750 m, 12.VIII.61, J. & M. Sedlacek Collectors, M.C.Z. Paratype 31500, Paratype *Scopodes wilsoni* Darl. (MCZ); 1♂, Okapa New Guinea, 11/10 1964, R. Hornabrook, Wanitabe, Ex Coll. Dept. Agr. P. M. No.: H/0245, *Scopodes* cf. *wilsoni* Darl (MCZ); 1♀, NEW GUINEA: NE 13 km SE Okapa 1650-1870 m 26.VIII.1964, J. & M. Sedlacek Collectors BISHOP, *Scopodes* cf. *wilsoni* Darl. (BMH); 1♀, 1 immat. ♀, Papua New Guinea, Morobe Prov., Wau, Mt. Kaindi, 1550 m, 7.X.1992, leg. A. Riedel (CBM); 1♂, NEW GUINEA: PAPUA Owen Stanly Range Goilala: Bume, 1950 m IV-30-V-2-1958, W. W. Brandt Collector BISHOP, *Scopodes wilsoni* Darl (BMH).

Etymology. The new name was given in honour of the taxonomist P. J. Darlington, Jr.

Scopodes laevifrons, spec. nov.

Figs 16, 42, 58

Types. Holotype: ♀, Irian Jaya, Jayawijaya Pr., Wamena, Pronggoli, 2000-2400 m, 17.-19.9.1991, leg. A. Riedel (ZSM). - Paratypes: 1♀, Irian Jaya, Jayawijaya Prov., Langda, 2100-2300 m, 17.-18.VIII.1992, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya Pr., Bime, 1600-2000 m, 10.IX.1993, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya Pr., N. Bime, 2000-2070 m, 21.IX.1993, leg. A. Riedel (CBM); 1♀, NEW GUINEA: SE Mt. Bosavi, 2300 m, 9.V.1973, J. L. Gressitt & et. ? (not readable) Malaise Trap BISHOP MUSEUM, *Scopodes simplex* Darlington det. G. E. Ball, 1989 (BMH).

Diagnosis. Small, green species with dark legs, rather large, not contrasting elytral foveae, and almost non-striate elytra with traces of microreticulation only. Further distinguished from related species by absolutely smooth clypeus and frons, regular frontal sulci, and superficial transverse pronotal sulci.

Description

Measurements. Length: 3.35-3.50 mm; width: 1.35-1.40 mm. Ratios. Width head/pronotum: 1.24-1.26; width/length of pronotum: 1.23-1.26; width elytra/pronotum: 1.75-1.81; length/width of elytra: 1.31-1.34.

Colour. Dark green, labrum and clypeus black with green tinge. Antenna reddish, terminal segments slightly darkened. Legs black, tibiae light reddish.

Head. Eyes very large, space between inner border of eyes slightly narrower than diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with transverse, laterally oblique sulcus, virtually not striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons convex, wholly smooth, glossy. Frons between eyes with 7 rather deep, very regular sulci, the central ones being absolutely parallel. Sulci anteriorly and posteriorly rather shortened. Summit and neck slightly wrinkled, impunctate. Whole upper surface of head glossy. Antenna moderately elongate, median segments c. $1.2 \times$ as long as wide.

Pronotum. Convex, wide, cordiform, widest at lateral triangular process in anterior third. At apex very wide. Lateral border line distinct. Margin anteriorly rather rounded, behind triangular process

16



a



b



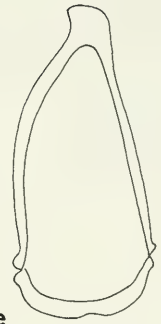
c



d



e



17

Fig. 16. *Scopodes laevifrons*, spec. nov. ♀ stylomere 1.

Fig. 17a-e. *Scopodes bicolor*, spec. nov. ♂ genitalia. For legends see Fig. 2.

feebly convex, in front of posterior angles barely concave. Lateral triangular process distinct, though small, obtusely triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with shallow, wide, somewhat oblique transverse sulcus. Upper surface posteriorly of sulcus with rather few, usually very superficial transverse sulci, apparently without puncturation, without microreticulation. Surface highly glossy.

Elytra. Fairly short and wide, rather convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third distinctly sinuate. Apex wide, apical border oblique to slightly sinuate. Surface with faint traces of striation only at base and near suture. Foveae in third interval rather large and deep, conspicuous, though not contrasting. Surface with faint traces of microreticulation only, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores very large and conspicuous. Wings atrophied.

Lower surface. Metepisternum c. $1.3 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia. Unknown.

♀ genitalia (Fig. 16). Stylomere 2 rather elongate, moderately curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae rather elongate. Apex of stylomere 1 with c. 2-3 elongate hairs. Lateral plate densely setose.

Variation. Little variation noted due to scarce material.

Distribution (Fig. 58). Central and eastern Irian Jaya, southwestern Papua New Guinea.

Habits. Collected on the ground in rather open area in medium altitude, one specimen in "Malaise trap".

Etymology. The name refers to the smooth, glossy frons.

Scopodes bicolor, spec. nov.

Figs 17, 43, 59

Types. Holotype: ♂, IR 13, Irian Jaya, Jayawijaya-Prov., S. Borne, 1750 m, 14.VIII.1992, leg. Balke (ZSM). - Paratype: 1♂, Irian Jaya, Jayawijaya-Prov., Borne, 2000 m, 14.VIII.1992, leg. A. Riedel (CBM).

Diagnosis. Medium-sized, blackish-bronzed species with green head and pronotum, yellow legs, large, not contrasting elytral foveae, and almost non-striate elytra with traces of microreticulation only. Further distinguished from related species by dense transverse sulci of pronotum and straight aedeagus with narrow, straight apex.

Description

Measurements. Length: 3.8-3.95 mm; width: 1.62-1.65 mm. Ratios. Width head/pronotum: 1.28-1.31; width/length of pronotum: 1.27-1.31; width elytra/pronotum: 1.79-1.83; length/width of elytra: 1.35.

Colour. Head and pronotum green, elytra black with faint bronze lustre. Labrum and clypeus black with bronze or greenish lustre. Antenna light reddish, apical segments gradually darker. Legs dirty yellow, only tarsi piceous.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather elongate, fairly triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part slightly longitudinally striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons slightly wrinkled and punctate, rather glossy. Frons between eyes with 7 deep, regular sulci that reach far posteriorly. Summit and neck slightly wrinkled, apparently impunctate. Whole upper surface of head glossy. Antenna rather short, median segments c. 1.1 × as long as wide.

Pronotum. Convex, moderately wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly rather convex, posteriorly of triangular process almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, rather large, triangular, laterally rather projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, inconspicuous transverse sulcus. Upper surface posteriorly of sulcus with rather dense and coarse, posteriorly regular transverse sulci. Anteriorly with rather irregular, coarse rugosity. Surface almost without puncturation, without microreticulation, glossy.

Elytra. Short and wide, convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third distinctly sinuate. Apex wide, apical border oblique and slightly sinuate. Surface without striation, only at base with traces of striation. Foveae in third interval large, rather deep, not contrasting. Surface with traces of superficial, transverse microreticulation only laterally, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores rather large and conspicuous. Wings atrophied.

Lower surface. Metepisternum c. 1.4 × as long as wide. Sternites with sparse and short pilosity, with rather distinct microreticulation.

♂ genitalia (Figs 17a-e). Genital ring little deformed, barely asymmetric, narrow and elongate. Apex rather narrow, apically rounded, laterally angulate, arms slender. Aedeagus large, little curved, feebly asymmetric, lower surface gently curved, apex narrow, projecting, asymmetric, depressed, feebly turned right. Orificium rather elongate. Parameres medium-sized, as in figs 17c,d.

♀ genitalia. Unknown.

Variation. Little variation noted in relative width of pronotum and in degree of the transverse sulci of pronotum.

Distribution (Fig. 59). Eastern Irian Jaya. Known only from the closeby type localities.

Habits. Collected on open, clayish ground in medium altitude.

Etymology. The name refers to the characteristic bicoloured upper surface.

Scopodes chalceus, spec. nov.

Figs 18, 44, 58

Types. Holotype: ♂, Irian Jaya, Pr. Manokwari, Testega-Meydoudga, 1100 m, 4.4.1993, leg. A. Riedel (ZSM-CBM).

Diagnosis. Medium-sized, uniformly brassy species, with yellow legs, medium-sized, not contrasting elytral foveae, and almost non-striate elytra without microreticulation. Further distinguished from related species by few, superficial transverse sulci of pronotum, upturned apex of aedeagus, and rather symmetric ♂ genital ring.

Description

Measurements. Length: 3.8 mm; width: 1.63 mm. Ratios. Width head/pronotum: 1.29; width/length of pronotum: 1.17; width elytra/pronotum: 1.86; length/width of elytra: 1.32.

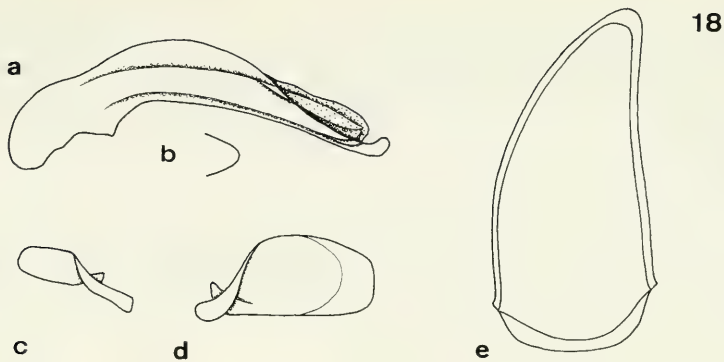


Fig. 18a-e. *Scopodes chalceus*, spec. nov. ♂ genitalia. b. apex of aedeagus in ventral view. For other legends see Fig. 2.

Colour. Brassy with cupreous lustre. Labrum, clypeus, and anterior part of frons black with faint greenish tinge. Antenna reddish, posterior segments slightly darker. Legs yellow.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part slightly striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons faintly wrinkled, rather glossy. Frons between eyes with c. 7 deep, rather regular sulci that reach far posteriorly. Summit and neck almost smooth, apparently impunctate. Whole upper surface of head glossy. Antenna rather short, median segments c. 1.1 × as long as wide.

Pronotum. Convex, moderately wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly strongly rounded, posteriorly but faintly convex, in front of posterior angles barely concave. Lateral triangular process distinct, though small, obtusely triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin almost straight. Median line rather shallow, not reaching apex nor base. In apical third with rather shallow, moderately wide, transverse sulcus. Upper surface posteriorly of sulcus with few, rather superficial, transverse sulci, almost without puncturation, without microreticulation. Surface highly glossy.

Elytra. Moderately short and wide, convex. Base narrow, therefore elytra markedly widened in posterior third. Sides rather strongly rounded, in anterior third markedly sinuate. Apex wide, apical border oblique and distinctly sinuate. Surface with very superficial traces of striation. Foveae in third interval medium-sized, though fairly deep and conspicuous, not contrasting. Surface without microreticulation, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores fairly large and conspicuous. Wings medium-sized.

Lower surface. Metepisternum c. 1.4 × as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 18a-e). Because the holotype was not fully hardened, the ♂ genitalia are still very delicate and difficult to examine. Genital ring little deformed and slightly asymmetric, moderately wide. Apex regularly tapering, though rounded, arms narrow, but see note above. Aedeagus medium-sized, moderately curved, barely asymmetric, lower surface gently curved, apex upturned, moderately wide. Orificium rather short. Parameres medium-sized, as in figs 18c,d.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 58). Vogelkop, westernmost Irian Jaya. Known only from type locality.

Habits. Collected at forest edge in median altitude on open clayish ground.

Etymology. The name refers to the uniformly chalceous colouration.

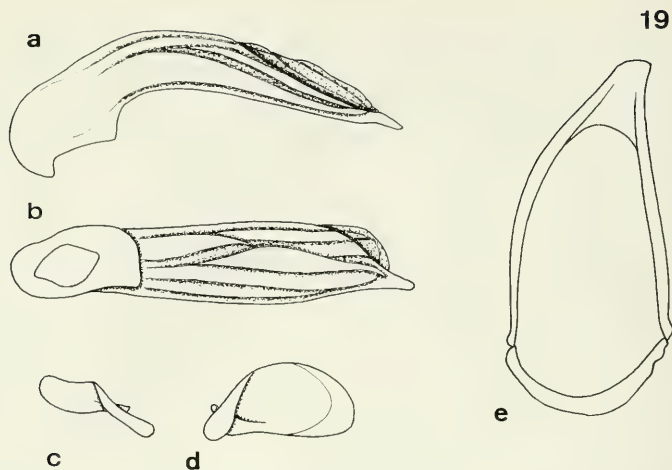


Fig. 19a-e. *Scopodes tristis*, spec. nov. ♂ genitalia. For legends see Fig. 2.

***Scopodes tristis*, spec. nov.**

Figs 19, 45, 59

Types. Holotype: ♂, Irian Jaya, Manokwari Pr., Ransiki-Anggi, 1850-2050 m, 26.8.1991, leg. A. Riedel (ZSM-CBM).

Diagnosis. Small, blackish to faintly bronzed species with dark legs, rather large, not contrasting elytral foveae, and almost non-striate elytra with traces of microreticulation only. Further distinguished from related or similarly coloured species by short and narrow apex and almost straight lower surface of aedeagus.

Description

Measurements. Length: 3.45 mm; width: 1.35 mm. Ratios. Width head/pronotum: 1.3; width/length of pronotum: 1.15; width elytra/pronotum: 1.87; length/width of elytra: 1.37.

Colour. Black, labrum, clypeus and anterior part of frons bronze tinge, summit of head and dorsal surface of pronotum with faint greenish tinge. Antenna piceous, legs blackish, tibia brown.

Head. Eyes very large, space between inner border of eyes slightly wider than diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with indistinct transverse sulcus, basal part superficially longitudinally striate. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons irregularly and very superficially wrinkled, in middle almost smooth, glossy. Frons between eyes with c. 7 rather shallow, posteriorly somewhat irregular sulci. Summit and neck irregularly and superficially wrinkled, laterally indistinctly punctate. Whole upper surface of head fairly glossy. Antenna moderately elongate, median segments c. 1.3 × as long as wide.

Pronotum. Convex, rather narrow, slightly cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly rounded, behind triangular process gently convex, in front of posterior angles faintly concave. Lateral triangular process distinct, triangular, though rather small. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, rather deep, not reaching apex nor base. In apical third with shallow, though wide, somewhat oblique transverse sulcus. Upper surface posteriorly of sulcus with rather regular, though somewhat superficial transverse sulci, without puncturation, with traces of microreticulation only. Surface rather glossy.

Elytra. Comparatively elongate, moderately convex. Base comparatively narrow. Sides gently rounded, in anterior third sinuate. Apex wide, apical border oblique. Surface almost non-striate, only at the very base with traces of striae. Foveae in third interval large, though not deep, not contrasting. Surface with extremely superficial traces of microreticulation only, glossy. Marginal pores fairly large, moderately conspicuous. Wings atrophied.

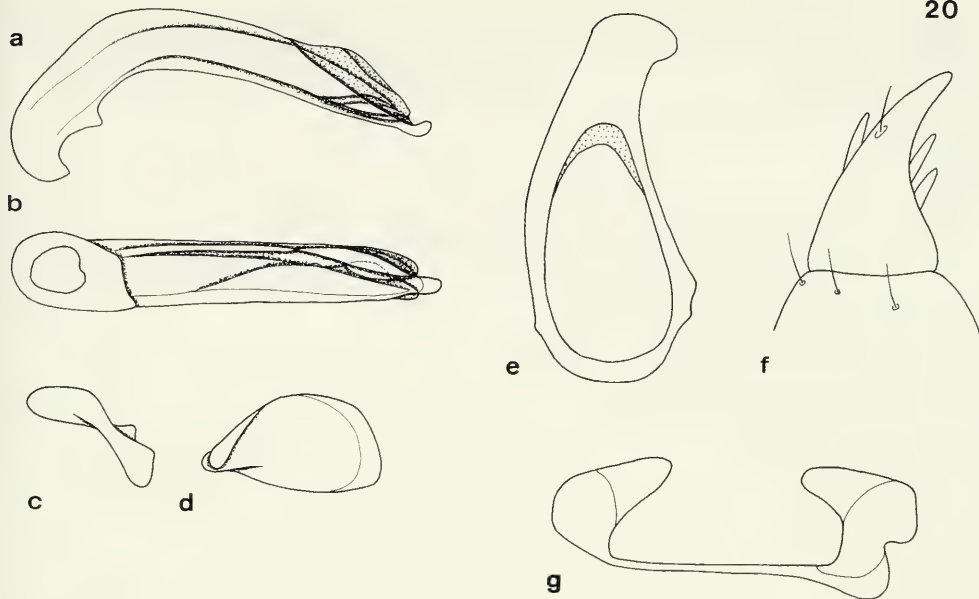


Fig. 20a-g. *Scopodes cheesmanni* Darlington. ♂ and ♀ genitalia. For legends see Fig. 2. g. Sternum VIII.

Lower surface. Metepisternum c. 1.5 as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 19a-e). Genital ring little deformed, elongate, feebly asymmetric, apex narrow, arms comparatively slender. Aedeagus rather depressed, straight, barely asymmetric, lower surface straight, apex narrow, rather elongate, straight, slightly turned left. Orificium rather elongate. Parameres rather small, as in figs 19c,d.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 59). Vogelkop, western Irian Jaya. Known only from type locality.

Habits. Collected in medium altitude, presumably on clayish ground.

Etymology. The name refers to the uniformly blackish colouration.

Scopodes cheesmanni Darlington

Figs 20, 46, 61

Scopodes cheesmanni Darlington, 1968, p. 201 (pro parte).

Types. Holotype (not seen): ♂, DUTCH NEW GUINEA: Cyclops Mts., Mt. Lina, 3,500 ft. III.1936. L. E. Cheesman. B.M.1936-271 (BMNH). - Paratypes (seen): 1 ♂, same data, M.C.Z. Paratype 31503, Paratype *Scopodes cheesmanni* Darl. (MCZ); 2 ♂♂, DUTCH NEW GUINEA: Cyclops Mts., 3,400-3,500 ft. III.1936. L. E. Cheesman. B.M.1936-271 M.C.Z. Paratype 31503, Paratype *Scopodes cheesmanni* Darl. (MCZ).

Note. The paratype series received from MCZ and BMH includes 4 specimens from Snow Mts. (Western New Guinea) and from Bismarck Range (Papua New Guinea) that do not belong to *S. cheesmanni*, but to another, new species *S. minor* (see below). Additional paratypes of *S. cheesmanni* are located in BMNH and RMHL, but were not available for study now. They likely include both species, too.

Because the original description matches much better the specimens from Cyclops Mts. and because I have seen a paratype that was collected together with the holotype, I am quite sure of the identity of *S. cheesmanni*.

Diagnosis. Rather large, bright blue or violaceous species with dark legs, very large, at bottom blue elytral foveae, and non-striate elytra without microreticulation. Further distinguished from related or similarly coloured species by very dense and regular transverse pronotal sulci, highly asymmetric and deformed genital ring, and narrow aedeagus with almost straight lower surface and knob-like upturned apex.

Description

Measurements. Length: 4.3-4.5 mm; width: 1.85-1.90 mm. Ratios. Width head/pronotum: 1.30-1.32; width/length of pronotum: 1.17-1.20; width elytra/pronotum: 2.0-2.03; length/width of elytra: 1.30-1.34.

Colour. Head and prothorax steel-blue, elytra either violaceous or bluish-black with some purplish lustre. Discal and lateral foveae and border of elytra blue. Antenna yellow, terminal segments just faintly darkened. Legs dark piceous, though tibiae dirty yellow.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye, or even narrower. Labrum moderately elongate, gently triangular, anterior border fairly convex, slightly sinuate, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, surface usually somewhat striate or wrinkled, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons more or less wrinkled, sometimes in middle rather smooth. Frons between eyes with c. 8 deep, fairly regular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather glossy. Antenna narrow and fairly elongate, median segments c. 1.4 × as long as wide.

Pronotum. Convex, moderately wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posteriorly of triangular process slightly convex, in front of posterior angles barely concave. Lateral triangular process rather large, acute, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. Without distinct transverse sulcus in apical third. Whole upper surface with very dense, regular, transverse sulci. Surface almost without puncturation, without microreticulation, glossy.

Elytra. Rather short, wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third fairly sinuate. Apex wide, apical border oblique, faintly concave. Surface not striate. Foveae in third interval very large and deep, moderately contrasting. Microreticulation absent. Surface highly glossy. Pilosity very sparse and short. Marginal pores large and rather conspicuous. Wings elongate.

Lower surface. Metepisternum c. 1.6 × as long as wide. Sternites with moderately sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 20a-e,g). Genital ring markedly deformed, highly asymmetric, large, tapering to apex. Apex wide and elongate, apically rounded and much produced laterally, arms very wide. Aedeagus medium-sized, narrow and parallel, basally strongly curved, lower surface straight, apex short, markedly upturned. Orificium rather short. Parameres large, as in figs 20c,d.

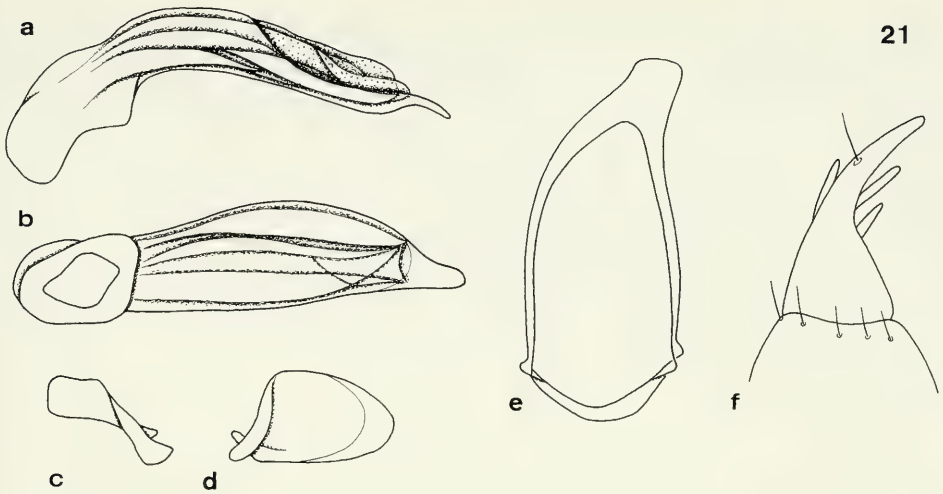
♀ genitalia (Fig. 20f). Stylomere 2 rather elongate, apex acute, rather curved, with dorsal ensiform and nematiform seta. Both dorsal and ventral ensiform setae elongate. Apex of stylomere 1 with c. 2-3 elongate hairs. Lateral plate densely setose.

Variation. Only some variation noted in degree of metallic tint and in relative width of pronotum.

Distribution (Fig. 61). Central, Eastern and northeastern Irian Jaya.

Habits. A series has been collected on wet rocks and clayish ground beside a river, together with certain species of *Stenus* (Staphylinidae).

Additional material examined (24): 10♂♂, 12♀♀, IR 14, Irian Jaya, Jayawijaya-Prov., Takime-Fluß u. Borme, 1000 m, 15.VIII.1992, leg. Balke & Talak (CBM, ZSM); 1♀, 22-26.IX.1991, IRIAN JAYA, Jayawijaya-Prov., Angguruk-Membahan, leg. A. Riedel (CBM); 1♂, Irian Jaya, Jayawijaya-Prov., Taramlu-Bime, 800-1700 m, 7-9.IX.1993, leg. A. Riedel (CBM).



21

Fig. 21a-f. *Scopodes minor*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

***Scopodes minor*, spec. nov.**

Figs 21, 47, 60

Scopodes cheesmanni Darlington, 1968, p. 201 (pro parte)

Types. Holotype: ♂, Neth. Ind.-American New Guinea Exped. Rattan Camp 1150 m II-III.1939, L. J. Toxopeus, M.C.Z. Paratype 31503, Paratype *Scopodes cheesmanni* Darl. (MCZ). - Paratypes: 1 ♀, same data, M.C.Z. Paratype 31503, Paratype *Scopodes cheesmanni* Darl. (CBM); 1 ♀, Chimbu Vy, N.G. (Bismarck Rge) open, 5-7500 ft, Oct'44 Darlington, M.C.Z. Paratype 31503, Paratype *Scopodes cheesmanni* Darl. (MCZ); 1 ♀, NEW GUINEA: NE Eliptamin Valley 1665-2350 m, June 23-30, 1959, W. W. Brandt Collector BISHOP, Paratype *Scopodes cheesmanni* Darl. (BMH).

Note. The types of this species were originally included in the type series of *Scopodes cheesmanni* Darlington.

Diagnosis. Medium sized, blue or violaceous species with dark legs, moderately large, not contrasting elytral foveae, and in basal half superficially striate elytra with faint microreticulation. Further distinguished from related or similarly coloured species by fairly dense, moderately regular transverse pronotal sulci, only slightly asymmetric genital ring, and markedly convex, apically bisinuate lower surface and narrow and elongate apex of aedeagus.

Description

Measurements. Length: 3.7-3.9 mm; width: 1.65-1.70 mm. Ratios. Width head/pronotum: 1.22-1.25; width/length of pronotum: 1.23-1.26; width elytra/pronotum: 1.83-1.88; length/width of elytra: 1.34-1.36.

Colour. Head and prothorax steel-blue, with or without a violaceous lustre, elytra violaceous. Sometimes whole beetle bluish-violaceous. Discal and lateral foveae of elytra not contrasting. Antenna gradually darkened from 5th segment, 1st-4th segments yellow. Legs dark piceous, though tibiae dark reddish.

Head. Eyes very large, space between inner border of eyes slightly wider than diameter of eye. Labrum moderately elongate, gently triangular, anterior border fairly convex, laterally rather distinctly sinuate, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, surface more or less striate or wrinkled, rather glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons either rather wrinkled, either almost smooth. Frons between eyes with c. 8 deep, more or less regular sulci that reach far posteriorly. Summit and neck coarsely wrinkled, apparently impunctate. Whole upper surface of head rather glossy. Antenna short and rather wide, median segments c. 1.1-1.2 × as long as wide.

Pronotum. Convex, rather wide, trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly convex, posteriorly of triangular process straight or faintly convex, in front of posterior angles barely concave. Lateral triangular process rather large, acute, laterally fairly projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. With shallow transverse sulcus in apical third. Upper surface behind sulcus with dense, superficial, rather irregular, transverse sulci. Surface with fine and scattered puncturation, without microreticulation, rather glossy.

Elytra. Rather short, wide, fairly convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third but faintly sinuate. Apex wide, apical border oblique, almost straight. Surface in basal half with faint traces of striation. Foveae in third interval moderately large and deep, not contrasting. Microreticulation distinct, though superficial, consisting of slightly transverse meshes. Surface rather glossy. Pilosity moderately sparse, though short. Marginal pores moderately large and not markedly conspicuous. Wings comparatively elongate.

Lower surface. Metepisternum c. $1.6 \times$ as long as wide. Sternites with fairly dense, but short pilosity, with distinct microreticulation.

♂ genitalia (Figs 21a-e). Genital ring moderately deformed, slightly asymmetric, large, narrow. Apex narrow and elongate, apically rounded, slightly produced laterally, arms narrow. Aedeagus medium-sized, rather wide, asymmetric, strongly curved, lower surface concave, near apex markedly sinuate. Apex elongate, depressed, slightly curved down. Orificium medium-sized. Parameres large, as in figs 21c,d.

♀ genitalia (Fig. 21f). Stylomere 2 very narrow and elongate, apex acute, strongly curved, with dorsal ensiform and nematiform seta. Both dorsal and ventral ensiform setae elongate. Apex of stylomere 1 with c. 4-5 elongate hairs. Lateral plate densely setose.

Variation. Some variation noted in colour and in degree of striation of clypeus and frons.

Distribution (Fig. 60). Central Irian Jaya, central Papua New Guinea.

Habits. Unknown. The type series was collected in medium altitude.

Etymology. The name refers to the smaller size compared with the relative *S. cheesmanni*.

Scopodes robustus, spec. nov.

Figs 1, 22, 48, 62

Scopodes aereus (nom. nov. for *Scopodes simplex* Darlington, 1968, p. 201 (pro parte).

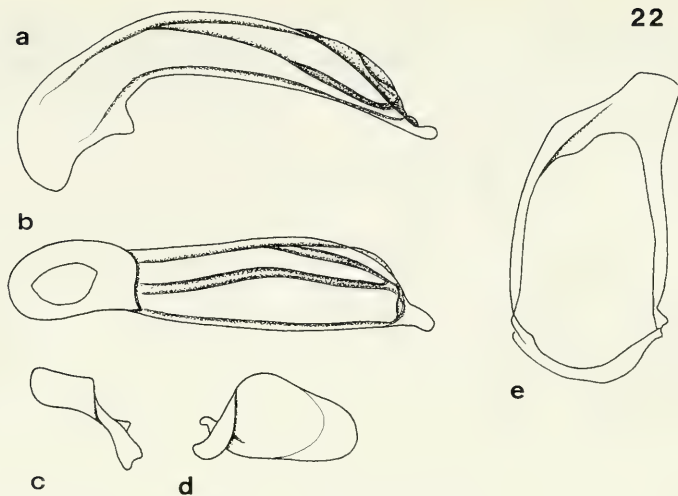
Types. Holotype: ♂, NEW GUINEA (NW) Wisselmeren, Moanemani, Kamo V. 1500 m, 14.VIII.'62, J. Sedlacek Collector, M.C.Z. Paratype 31502, Paratype *Scopodes simplex* Darl. (MCZ). - Paratypes: 2♂♂, 5♀♀, same data, M.C.Z. Paratype 31502, Paratype *Scopodes simplex* Darl. (MCZ); 1♂, 1♀, NEW GUINEA (NW) Wisselmeren, Enarotadi, 1500 m. 14.VIII.1962, J. Sedlacek Collector BISHOP, Paratype *Scopodes simplex* Darl. (BMH); 1♂, NEW GUINEA (NW) Wisselmeren, Itouda Kamo V., 1500-1700 m 18.VIII.1962, J. Sedlacek Collector BISHOP, *Scopodes simplex* Darlington det. B. Ball 1989 (BMH); 2♂♂, 2♀♀, Irian Jaya, Baliem-Distr., Melangama Ilugwa, 2300 m, Pass-Valley, 10.9.1990, leg. Riedel (CBM); 5♂♂, 21♀♀, Irian Jaya, Jayawijaya-Prov., Kono-Pini, 2400-2800 m, 20.IX.1992, leg. A. Riedel (CBM, UVB, ZSM); 1♀, IR X, Irian Jaya, Jayawijaya-Prov., Borne-Tanime, 2000 m, 20.VIII.1992, leg. Balke (ZSM); 1♂, Irian Jaya, Jayawijaya-Prov., Tanime-Eipomek, Tanime S-Seite, 2300 m, 24.IX.1993, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya-Prov., Eipomek-Nalca, Eipomek-Seite, 2100 m, 26.IX.1993, leg. A. Riedel (CBM).

Note. The holotype and 9 paratypes of *S. robustus*, spec. nov. were originally included in the type series of *S. simplex* Darlington (= *Scopodes aereus*, nom. nov.) the holotype of which, together with the eastern representatives of the type series, are synonymous with *S. wilsoni* Darlington.

Diagnosis. Rather large, green species with or without cupreous lustre, with dark legs, large, contrasting elytral foveae, faintest traces of elytral striation only, and with faint microreticulation. Further distinguished from related species by very weak transverse pronotal sulci, slightly concave lower surface and slightly asymmetric and somewhat knob-like apex of aedeagus.

Description

Measurements. Length: 4.1-4.3 mm; width: 1.7-1.8 mm. Ratios. Width head/pronotum: 1.12-1.17; width/length of pronotum: 1.21-1.29; width elytra/pronotum: 1.73-1.76; length/width of elytra: 1.34-1.37.



22

Fig. 22a-e. *Scopodes robustus*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Colour. Bright green, though pronotum and/or elytra sometimes with cupreous, or bronzed, of bluish lustre, sometimes also frons cupreous or bluish. Labrum and clypeus black with green lustre. Bottom of elytral foveae green. Antenna piceous, 2nd-4th segments light reddish. Legs blackish, tibia brown.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with indistinct transverse sulcus, either in basal part moderately longitudinally striate, or wholly and coarsely striate. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons slightly or rather densely, irregularly wrinkled, always glossy. Frons between eyes with c. 8 rather deep and fairly regular sulci. Summit and neck irregularly and superficially wrinkled, laterally indistinctly punctate. Whole upper surface of head glossy. Antenna rather elongate, median segments c. $1.4 \times$ as long as wide.

Pronotum. Convex, wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly strongly rounded, behind triangular process feebly convex, in front of posterior angles faintly concave. Lateral triangular process distinct, though small, obtusely triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with very shallow and superficial, wide, somewhat oblique transverse sulcus. Upper surface posteriorly of sulcus with rather regular, though usually markedly superficial transverse sulci, with sparse and very fine puncturation, without microreticulation. Surface highly glossy.

Elytra. Fairly short and wide, rather convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third more or less distinctly sinuate. Apex wide, apical border oblique. Surface almost non-striate, or with faint traces of striation only. Foveae in third interval large and deep, conspicuous, more or less contrasting. Surface with distinct, though superficial microreticulation that is slightly irregular around the foveae, glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores very large and conspicuous. Wings atrophied.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 22a-e). Genital ring fairly deformed, moderately asymmetric, moderately wide. Apex wide, apically rectangular, arms moderately slender. Aedeagus large, rather curved, slightly asymmetric, lower surface gently concave, apex knob-like, slightly turned left. Orificium short. Parameres large, as in figs 22c,d.

♀ genitalia (Fig. 1). Stylomere 2 rather elongate, rather curved, with dorsal ensiform and 1 (rarely 2) nematiform seta. Apex of stylomere 1 with c. 4-5 elongate hairs. Lateral plate densely setose.

Variation. Rather variable species with respect to colour, degree of striation of elytra, and degree of rugosity of labrum, frons, and pronotum.

Distribution (Fig. 62). Central and Eastern Irian Jaya.

Habits. Collected on the ground on wet, sandy soil with sedges in a clearing in medium altitude.

Etymology. The name refers to the rather robust shape of the elytra.

Scopodes striaticollis, spec. nov.

Figs 23, 49, 60

Types. Holotype: ♂, Irian Jaya, Pr. Manokwari, Mokwam-Warmare, 300-1400 m, 19.4.1993, leg. A. Riedel (ZSM-CBM).

Diagnosis. Rather small, blackish-violaceous species with brassy to greenish lustre, yellow legs, large, contrasting elytral foveae, faintest traces of elytral striation only, and without microreticulation. Further distinguished from related species by very dense and regular transverse pronotal sulci, highly asymmetric and deformed male genital ring, and asymmetrically knob-like and slightly dentate apex of aedeagus.

Description

Measurements. Length: 3.7 mm; width: 1.62 mm. Ratios. Width head/pronotum: 1.25; width/length of pronotum: 1.25; width elytra/pronotum: 1.87; length/width of elytra: 1.24.

Colour. Elytra black, with brassy to violaceous lustre, head and pronotum including labrum and clypeus violaceous with greenish lustre, the green colour found especially in the sulci on head and Pronotum. Foveae on 3rd interval contrastingly blue at bottom. Antenna infusate, 1st-4th segments yellow, 5th gradually darkened. Legs yellow.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part coarsely striate, fairly glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons strongly wrinkled, rather glossy. Frons between eyes with c. 7 deep, rather regular sulci that reach far posteriorly. Summit and neck slightly wrinkled, apparently impunctate. Whole upper surface of head glossy. Antenna moderately elongate, median segments c. $1.2 \times$ as long as wide.

Pronotum. Convex, rather wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly strongly rounded, posteriorly almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, fairly large, regularly triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin almost straight. Median line distinct, fairly deep, not reaching apex nor base. Apical transverse sulcus almost invisible within the dense transverse sulci. Upper surface with strong and very dense transverse sulci, with sparse puncturation, without microreticulation, though bottom of sulci slightly punctate. Surface highly glossy.

Elytra. Very short and wide, convex. Base comparatively wide, though in spite of that elytra posteriorly markedly widened. Sides gently rounded, in anterior third rather feebly sinuate. Apex wide, apical border oblique and faintly sinuate. Surface with faint traces of striation in basal half only. Foveae in third interval large, deep, very conspicuous, contrasting. Surface on disk almost without microreticulation, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores large and conspicuous. Wings rather short.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 23a-e). Genital ring highly deformed and asymmetric, moderately wide. Apex wide, evenly rounded, arms rather stout. Aedeagus medium-sized, moderately curved, slightly asymmetric, lower surface gently curved, apex slightly upturned and knoblike and on upper surface faintly denticulate. Orificium rather short. Parameres rather large and wide, as in figs 23c,d.

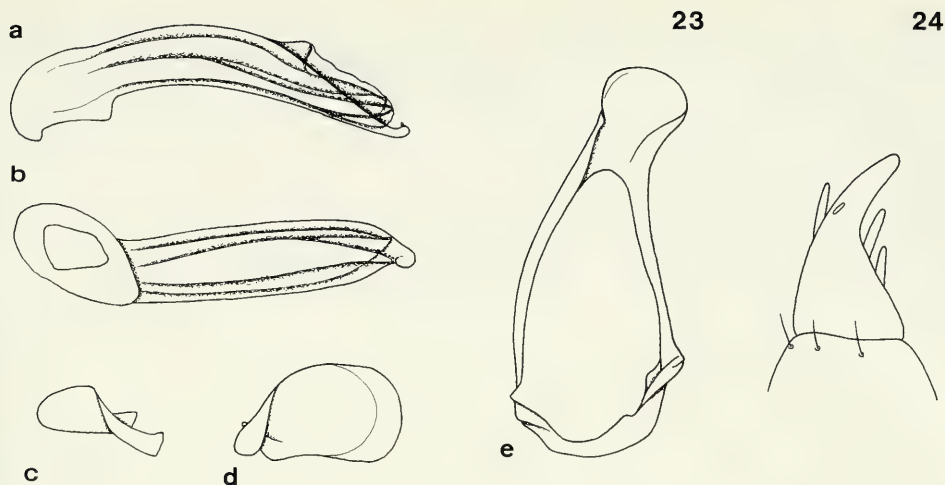
♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 60). Vogelkop, westernmost Irian Jaya. Known only from type locality.

Habits. Collected in medium altitude on shady track in closed forest.

Etymology. The name refers to the dense, transverse sulci of the pronotum.



23

24

Fig. 23a-e. *Scopodes striaticollis*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Fig. 24. *Scopodes caeruleus*, spec. nov. ♀ stylomere 1.

***Scopodes caeruleus*, spec. nov.**

Figs 24, 50, 61

Types. Holotype: ♀, Irian Jaya, Pr. Manokwari, Testega-Meydoudga, 1100 m, 4.4.1993, leg. A. Riedel (ZSM-CBM).

Diagnosis. Medium-sized, blackish-blue species with brassy to bluish lustre, yellow legs, large, contrasting elytral foveae, faintest traces of elytral striation only, and with faint though distinct microreticulation. Further distinguished from related species by less dense and regular transverse pronotal sulci.

Description

Measurements. Length: 4 mm; width: 1.7 mm. Ratios. Width head/pronotum: 1.27; width/length of pronotum: 1.22; width elytra/pronotum: 1.90; length/width of elytra: 1.25.

Colour. Elytra black, with distinct brassy to cupreous lustre, laterally faintly bluish. Head and pronotum steel-blue with some violaceous lustre. Labrum, clypeus, and anterior part of frons black. Foveae on 3rd interval contrastingly blue at bottom. 1st-4th segments of antenna yellow, then gradually infuscate. Legs yellow.

Head. Eyes very large, space between inner border of eyes slightly narrower than diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part very faintly striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons not wrinkled, smooth, highly glossy. Frons between eyes with c. 7 deep, rather regular sulci that reach far posteriorly. Summit and neck almost smooth, apparently impunctate. Whole upper surface of head impunctate and very glossy. Antenna moderately elongate, median segments c. 1.2 × as long as wide.

Pronotum. Convex, rather wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly strongly rounded, posteriorly almost straight, in front of posterior angles barely concave. Lateral triangular process distinct, fairly large, triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin almost straight. Median line distinct, fairly deep, not reaching apex nor base. Apical transverse sulcus in anterior third shallow, though visible. Upper surface behind anterior sulcus with fairly strong and moderately dense transverse sulci, with very sparse puncturation, without microreticulation, also bottom of sulci almost impunctate. Surface highly glossy.

Elytra. Very short and wide, convex. Base comparatively wide, though elytra posteriorly somewhat widened. Sides gently rounded, in anterior third rather feebly sinuate. Apex wide, apical border oblique

and faintly sinuate. Surface with faint traces of striation in basal half only. Foveae in third interval very large, deep, very conspicuous, contrasting. Surface with superficial, though distinct microreticulation, glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores large and conspicuous. Wings rather short.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia. Unknown.

♀ genitalia (Fig. 24). Stylomere 2 rather elongate, rather curved, with dorsal ensiform seta, but the single specimen apparently without nematiform seta. Both dorsal and ventral ensiform setae rather elongate. Apex of stylomere 1 with c. 3 elongate hairs. Lateral plate rather sparsely setose.

Variation. Unknown.

Distribution (Fig. 61). Vogelkop, westernmost Irian Jaya. Known only from type locality.

Habits. Collected at forest edge in median altitude on open clayish ground.

Etymology. The name refers to the conspicuous blue colouration of head and pronotum.

Note. The holotype is rather similar to the foregoing species and is mainly distinguished by smoother facial sulci, smooth frontal field, slightly narrower and less dense and strong transverse pronotal sulci, presence of a superficial, though visible microreticulation on the elytra, and blue rather than greenish lustre of surface. The discovery of the ♂ of this and of the ♀ of the foregoing species will finally prove, whether both are conspecific or not.

Scopodes rufipes, spec. nov.

Figs 25, 51, 61

Types. Holotype: ♂, Irian Jaya, Jayawijaya-Prov., Endoman-Okloma, 1600-2000 m, 16.IX.1992, leg. A. Riedel (ZSM-CBM).

Diagnosis. Rather large, green species with yellow legs, large, contrasting elytral foveae, superficial elytral striation, and distinct though superficial microreticulation. Further distinguished from related species by rather superficial transverse pronotal sulci, extremely asymmetric and deformed male genital ring, and markedly knob-like apex of aedeagus.

Description

Measurements. Length: 4.25 mm; width: 1.8 mm. Ratios. Width head/pronotum: 1.19; width/length of pronotum: 1.33; width elytra/pronotum: 1.74; length/width of elytra: 1.35.

Colour. Green, elytra with slight blackish tint. Discal and lateral foveae of elytra bright green. Basal half of antenna light yellow, posterior half gradually becoming reddish to light piceous. Legs yellow, only tarsi piceous.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum rather short and wide, anterior border moderately convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part irregularly striate, uneven, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons coarsely and irregularly wrinkled, in middle convex, rather glossy. Frons between eyes with 7 deep, parallel, regular sulci that reach far posteriorly. Summit and neck somewhat wrinkled, laterally punctate. Whole upper surface of head glossy. Antenna moderately elongate, median segments c. $1.3 \times$ as long as wide.

Pronotum. Convex, wide, rather trapezoidal, widest at lateral triangular process in anterior third. Lateral border line distinct, though narrow. Margin anteriorly convex, posteriorly of triangular process straight, in front of posterior angles barely concave. Lateral triangular process distinct, medium sized, regularly triangular, laterally rather projecting. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with extremely shallow, wide, barely visible transverse sulcus. Behind transverse sulcus with rather shallow, fairly irregular transverse sulci. Surface with distinct, though fine puncturation, without microreticulation, markedly glossy.

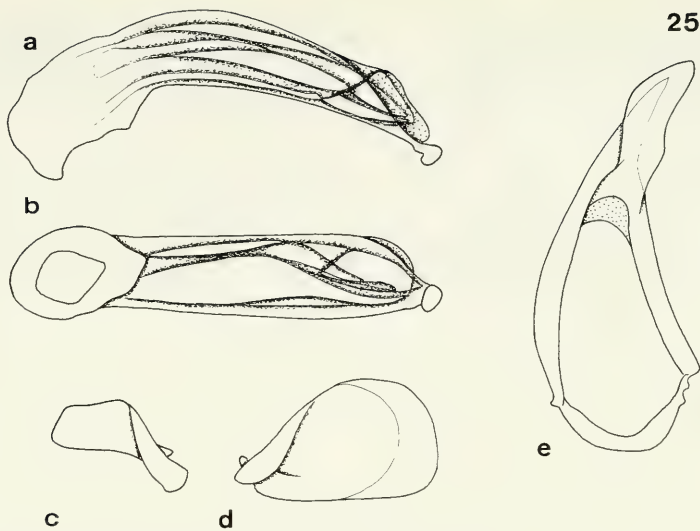


Fig. 25a-e. *Scopodes rufipes*, spec. nov. ♂ genitalia. For legends see Fig. 2.

Elytra. Short and wide, convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third conspicuously sinuate. Apex wide, apical border oblique and slightly sinuate. Surface with traces of striation only, but at base striae more distinct. Foveae in third interval wide and deep, fairly contrasting. Microreticulation conspicuous, though rather superficial, consisting of comparatively large, almost isodiametric to slightly transverse meshes that are slightly irregular around the discal foveae. Surface highly glossy. Pilosity almost invisible. Marginal pores rather large and conspicuous. Wings rather short.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with very sparse and short pilosity, with distinct microreticulation.

♂ genitalia (Figs 25a-e). Genital ring extremely deformed, highly asymmetric, narrow, tapering to apex. Apex very elongate, acute, laterally irregularly shaped, arms wide. Aedeagus large, fairly curved, lower surface almost straight, apex markedly knoblike. Orificium rather short. Parameres very large, as in figs 25c,d.

♀ genitalia. Unknown.

Variation. Unknown.

Distribution (Fig. 61). Eastern Irian Jaya. Known only from type locality.

Habits. Collected on open clayish ground in medium altitude.

Etymology. The name refers to the completely reddish legs of this species.

***Scopodes violaceus*, spec. nov.**

Figs 26, 52, 63

Types. Holotype: ♀, IR 18, Irian Jaya, Jayawijaya-Prov., Tanime-Bime, 1500 m, 21.VIII.92, leg. Balke (ZSM). - Paratypes: 1♂, Irian Jaya, Jayawijaya Prov., Borme, 1000-1450 m, 12.-15.VIII.1992, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya Prov., Borme, 1000-1300 m, 2.IX.1993, leg. A. Riedel (CBM); 1♀, Irian Jaya, Jayawijaya Pr., Wamena, Angguruk, 1600-1700 m, 21.-30.9.1991, leg. A. Riedel (CBM).

Diagnosis. Small, blue-violaceous species with dark legs, very small, not contrasting elytral foveae, superficial elytral striation, and without microreticulation. Further distinguished from related species by barely contrasting colour of fore body and elytra, laterally rather evenly rounded pronotum, little deformed male genital ring with square apex, and aedeagus with straight lower surface and depressed, not lanceolate apex, and not notched ♀ sternum VII.

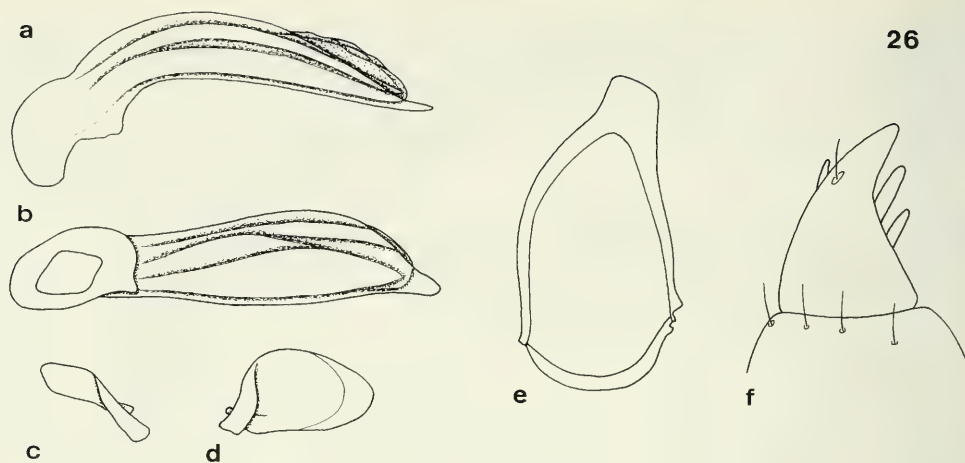


Fig. 26a-f. *Scopodes violaceus*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Description

Measurements. Length: 3.6-3.7 mm; width: 1.55 m. Ratios. Width head/pronotum: 1.25-1.35; width/length of pronotum: 1.11-1.22; width elytra/pronotum: 1.75-1.94; length/width of elytra: 1.31-1.43.

Colour. Blue-violaceous, with violaceous to dark cupreous lustre on Elytra. Labrum black, clypeus and anterior part of frons black with aeneous, greenish, or bluish tinge. Antenna reddish, 2nd-4th segments light reddish. Legs black, tibiae slightly lighter.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part not or feebly striate, glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons slightly wrinkled and/or punctate, rather glossy. Frons between eyes with c. 7 deep, slightly irregular sulci that reach far posteriorly. Summit and neck slightly wrinkled, apparently impunctate. Whole upper surface of head glossy. Antenna moderately elongate, median segments c. $1.2 \times$ as long as wide.

Pronotum. Convex, rather wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin rather evenly rounded throughout, in front of posterior angles barely concave, hence, whole pronotum has a rather rounded appearance. Lateral triangular process distinct, though very small, obtusely triangular. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with distinct, though rather shallow, moderately wide, transverse sulcus. Upper surface posteriorly of sulcus with rather few, superficial, transverse sulci, apparently without puncturation, without microreticulation. Surface highly glossy.

Elytra. Rather short and wide, convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third more or less distinctly sinuate. Apex wide, apical border oblique and slightly sinuate. Surface without striation. Foveae in third interval small, very inconspicuous, not contrasting. Surface with faint traces of microreticulation only laterally, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores rather large and conspicuous. Wings moderately elongate.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 26a-e). Genital ring fairly deformed, moderately asymmetric, moderately wide. Apex rather wide, apically rounded, arms fairly slender. Aedeagus large, moderately curved, slightly asymmetric, lower surface straight, apex slightly pointed, moderately wide, depressed, feebly turned left. Orificium rather short. Parameres medium-sized, as in figs 26c,d.

♀ genitalia (Fig. 26f). Sternum VII on apical border not notched. Stylomere 2 rather medium-sized, basally very wide, rather curved, with dorsal ensiform and nematiform seta. Ventral ensiform setae rather elongate. Apex of stylomere 1 with c. 3-4 elongate hairs. Lateral plate moderately setose.

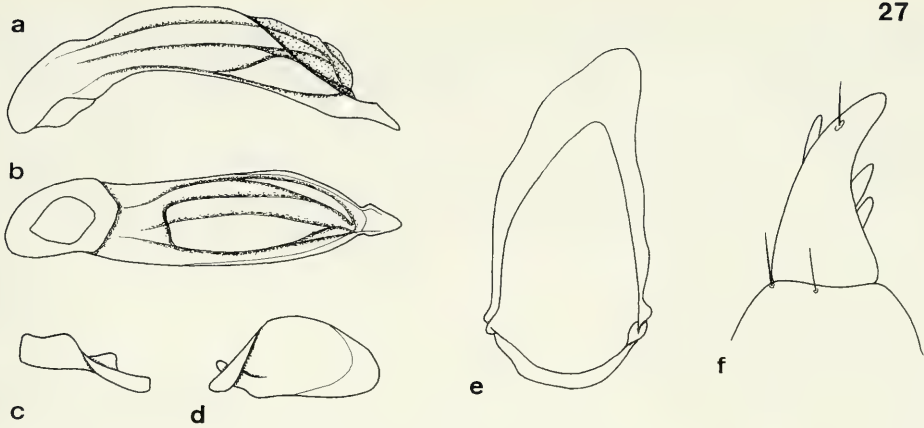


Fig. 27a-f. *Scopodes riedeli*, spec. nov. ♂ and ♀ genitalia. For legends see Fig. 2.

Variation. Some variation noted in shape, especially relative width of pronotum, shape of elytra, and striation of clypeus. Otherwise a highly characteristic species.

Distribution (Fig. 63). Central and eastern Irian Jaya.

Habits. Collected on mossy rocks on a slope in medium altitude.

Etymology. The name refers to the violaceous colour of the surface.

***Scopodes riedeli*, spec. nov.**

Figs 27, 53, 63

Types. Holotype: ♂, Irian Jaya, Pr. Manokwari, Testega-Meydoudga, 1100 m, 4.4.1993, leg. A. Riedel (ZSM). - Paratypes: 42♂♂, 36♀♀, same data (BMH, CBM, MCZ, UVB).

Diagnosis. Rather small, blue-violaceous species with dark legs, small, not contrasting elytral foveae, traces of striation at base of elytra only, and traces of microreticulation. Further distinguished from related species by contrasting colour of fore body and elytra, laterally not evenly rounded pronotum, rather deformed male genital ring with obtusely acute apex, aedeagus with gently concave, at apex sinuate lower surface and lanceolate apex, and distinctly notched ♀ sternite VII.

Description

Measurements. Length: 3.45-3.85 mm; width: 1.45-1.70 mm. Ratios. Width head/pronotum: 1.25-1.28; width/length of pronotum: 1.17-1.20; width elytra/pronotum: 1.84-1.88; length/width of elytra: 1.25-1.28.

Colour. Elytra violaceous, sometimes with cupreous lustre, head and pronotum usually rather contrasting steel-blue, sometimes pronotum, very rarely also the head more or less violaceous. Labrum, clypeus, and anterior part of frons black with distinct greenish tinge. Antenna reddish, apical segments slightly darker. Legs black, tibiae reddish.

Head. Eyes very large, space between inner border of eyes slightly narrower than diameter of eye. Labrum elongate, triangular, anterior border very convex, 6-setose, in basal part medially impressed. Clypeus with shallow, transverse sulcus, basal part usually rather coarsely striate, though glossy. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons usually strongly wrinkled, rather glossy. Frons between eyes with c. 7 deep, slightly irregular sulci that reach far posteriorly. Summit and neck slightly wrinkled, apparently impunctate. Whole upper surface of head glossy. Antenna moderately elongate, median segments c. $1.2 \times$ as long as wide.

Pronotum. Convex, rather wide, cordiform, widest at lateral triangular process in anterior third. Lateral border line distinct. Margin anteriorly strongly rounded, posteriorly slightly convex, in front of posterior angles barely concave. Lateral triangular process distinct, though small, obtusely triangular.

Posterior marginal seta absent. Anterior margin slightly convex, posterior margin almost straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with distinct, though rather shallow, moderately wide, transverse sulcus. Upper surface posteriorly of sulcus with rather few, moderately deep, transverse sulci that vary somewhat in distinctness, with sparse puncturation, without microreticulation. Surface highly glossy.

Elytra. Rather short and wide, convex. Base comparatively wide, therefore elytra rather rectangular. Sides gently rounded, in anterior third rather feebly sinuate. Apex wide, apical border oblique and slightly sinuate. Surface with traces of striation in basal half only. Foveae in third interval small, inconspicuous, not contrasting. Surface with more or less distinct traces of microreticulation, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores fairly large and conspicuous. Wings moderately elongate.

Lower surface. Metepisternum c. $1.4 \times$ as long as wide. Sternites with extremely sparse and short pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 27a-e). Genital ring rather deformed and asymmetric, moderately wide. Apex tapering, though rounded, arms rather stout, left in apical half conspicuously bisinuate. Aedeagus medium-sized, moderately curved, barely asymmetric, lower surface gently curved, sinuate in front of apex, apex markedly lanceolate, moderately wide, depressed. Orificium rather short. Parameres medium-sized, as in figs 27c,d.

♀ genitalia (Fig. 27f). Sternum VII at apex distinctly notched. Stylomere 2 medium-sized, basally rather narrow, moderately curved, with dorsal ensiform and nematiform seta. Apex of stylomere 1 with c. 2-3 elongate hairs. Lateral plate rather densely setose.

Variation. Some variation noted in colour, relative shape of pronotum, and distinctness of transverse striation of pronotum and of striation and microreticulation of elytra.

Distribution (Fig. 63). Vogelkop, westernmost Irian Jaya. Known only from type locality.

Habits. Collected at forest edge in median altitude on sand and gravel besides a large, mossy boulder.

Etymology. The name was given in honour of A. Riedel, the skilful collector of this and of several other new species.

Scopodes adonis Darlington

Figs 28, 54, 63

Scopodes adonis Darlington, 1968, p. 201.

Types. Holotype: ♂, NEW GUINEA: NE. Torricelli Mts. Mokai Vill. 750 m, XII-8-15-1958, W. W. Brandt Collector BISHOP, Holotype *Scopodes adonis* Darl. (BMH). - Paratypes: 2♂♂, 2♀♀, same data, M.C.Z. Paratype 31504, Paratype *Scopodes adonis* Darl. (MCZ); 1♂, 2♀♀, same locality and collector, XII-16-31-1958, Paratype *Scopodes adonis* Darl. (BMH); 1♀, NEW GUINEA: NE. Torricelli Mts. Mobitei, 750 m, II-28-III-4-'59, W. W. Brandt Collector BISHOP (BMH).

Diagnosis. Large, elongate, blue-violeaceous species with dark legs, very small, not contrasting elytral foveae, without striation, and without microreticulation. Further distinguished from all other species by body shape, especially cylindrical pronotum without triangular lateral process, elongate, laterally evenly rounded elytra with deeply sinuate apex and acute lateral apical angles, by and sharply hooked apex of aedeagus.

Description

Measurements. Length: 4.6-4.85 mm; width: 1.80-1.95 mm. Ratios. Width head/pronotum: 1.32-1.37; width/length of pronotum: 0.93-0.98; width elytra/pronotum: 2.11-2.17; length/width of elytra: 1.44-1.46.

Colour. Head and pronotum blue or blue-violeaceous, elytra blackish with violaceous or purplish tinge. Labrum and clypeus greenish-golden. 1st segment of antenna piceous with metallic hue, 2nd-4th segments yellow, apical segments gradually darkend, piceous. Legs blackish, tibiae but slightly lighter.

Head. Eyes very large, space between inner border of eyes about as wide as diameter of eye, or even slightly narrower. Labrum elongate, triangular, anterior border convex, 6-setose, in basal part medially impressed. Clypeus almost without transverse sulcus, completely glossy, though very sparsely punctate. Labrum, clypeus, and anterior part of frons with some very inconspicuous additional hairs. Anterior triangular field of frons almost smooth, convex, only between eyes with some fine transverse stri-

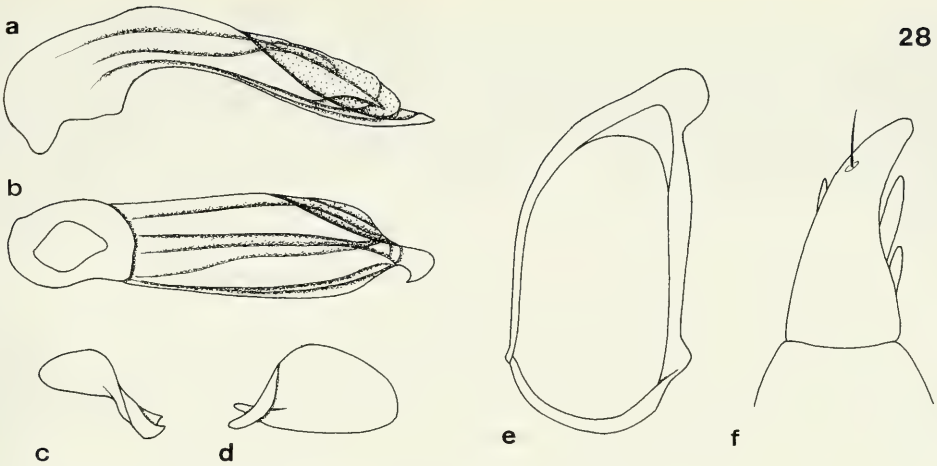


Fig. 28a-f. *Scopodes adonis* Darlington. ♂ and genitalia. For legends see Fig. 2.

oles, finely punctate, glossy. Frons between eyes with c. 5-7 rather shallow, slightly irregular sulci abbreviated anteriorly and posteriorly that curve curving laterally in posterior half and leave a wide non-striate space in middle. Summit and neck slightly wrinkled. Whole upper surface finely punctate, highly glossy. Antenna moderately elongate, rather narrow, median segments c. 1.4-1.5 × as long as wide.

Pronotum. Convex, oval, rather narrow, somewhat tubular, widest slightly behind position of anterior lateral seta. Apex wider than base. Lateral triangular process in anterior third absent. Lateral border absent. Base with a deep, transverse sulcus and with a wide and thickly swollen rim. Lateral margin evenly rounded throughout, in front of posterior angles concave. Posterior marginal seta absent. Anterior margin slightly convex, posterior margin straight. Median line distinct, fairly deep, not reaching apex nor base. In apical third with or without a very shallow transverse sulcus. Upper surface posteriorly of sulcus with several very fine, short, superficial, transverse striae. Apical part of surface with rather dense, rest with sparse, fine puncturation, without microreticulation. Surface highly glossy.

Elytra. Elongate, rather convex, regularly oval. Shoulders markedly obtuse. Sides evenly rounded throughout. Apex fairly wide, apical border oblique, markedly concave, lateral and sutural angles acute. Surface with or without traces of striation. Punctures on 3rd interval very small, difficult to see. Surface sparsely and finely punctate, without microreticulation, highly glossy. Pilosity very sparse and extremely short, barely visible. Marginal pores rather small and inconspicuous. Wings elongate.

Lower surface. Metepisternum c. 1.8 × as long as wide. Sternites with moderately sparse, rather elongate pilosity, with dense and distinct microreticulation.

♂ genitalia (Figs 28a-e). Genital ring deformed, asymmetric, large, fairly wide. Apex rather wide, apically rounded, strongly asymmetric, arms rather wide, parallel. Aedeagus large, depressed though wide, moderately curved, asymmetric, lower surface convex, apex extremely depressed, strongly hook-shaped, hook turned to left. Orificium rather elongate. Parameres rather large, as in figs 28c,d.

♀ genitalia (Fig. 28f). Stylomere 2 elongate, little curved, apex rather wide, with dorsal ensiform and nematiform seta, the latter markedly stout. Ventral ensiform setae large. Apex of stylomere 1 apparently without elongate hairs. Lateral plate sparsely setose on lateral border.

Variation. There is some variation in relative width of pronotum and of elytra, in sculpture of head, and degree of striation of elytra.

Distribution (Fig. 63). Northwestern Papua New Guinea. Actually this species has been only recorded from the Torricelli Montains near the north coast of western Papua New Guinea and from the Denake Range slightly to the west.

Habits. This species lives apparently in rather low altitude, as specimens have been recorded usually below 750 m (Darlington 1968).

Additional material examined (2): 1♂, same data like holotype, *Scopodes adonis* Darl. (BMH); 1♂, Papua New Guinea, West Sepik Prov., Vanimo, Denake Range, km 12, 500 m, 28.-29.X.1992, leg. A. Riedel (CBM).

Scopodes louwerensi, nom. nov.

Scopodes viridis Louwerens, 1969, p. 368.

Scopodes louwerensi, nom. nov. for *Scopodes viridis* Louwerens, 1969, not *Scopodes viridis* Broun, 1903.

The name *Scopodes viridis* Louwerens, 1969 for a species from New Ireland is preoccupied by *Scopodes viridis* Broun, 1903, a species from New Zealand that, however, has been synonymized with *Scopodes versicolor* Bates, 1878 (Britton 1941).

Discussion

The discovery of as many as 19 new *Scopodes*-species in a moderate sample of beetles from some rather restricted areas demonstrates that the actual number of the species occurring in New Guinea is presumably even considerably greater. Hence, any considerations about phylogeny and distribution of the species seem premature and are certainly highly speculative. However, I tried to ascertain some phylogenetically valuable characters for an attempt to explain at least the relations of the New Guinean species as a whole and the relationships of some more or less clear-cut groups within this assemblage.

Phylogeny

On the basis of the characters and their states mentioned in Tab. 1 it is evident that all New Guinean species with exception of *S. altus* Darlington (but presumably including *S. peterseni* Louwerens from New Britain and *S. louwerensi*, nom. nov. (= *S. viridis* Louwerens) from New Ireland, belong to a well founded, highly apomorphic, monophyletic group that is characterized by the synapomorphic states No. 1-9 (Fig. 66). The posterior lateral seta of the pronotum, however, is also absent in some species from Australia and New Zealand, but this is more likely a convergence than a synapomorphy, because the structure of the pronotum is in all involved species from Australia and New Zealand primitive and by no means comparable to that found in the New Guinean group.

Within this highly apomorphic group of species two rather distinct subgroups can be noted: 1. the species assemblage possessing comparatively depressed and elongate, strongly microreticulate elytra, namely the *chimbu*-subgroup of Bell & Bell (1989) including *S. tafa*, *S. viridiaeneus*, *S. foveipennis*, *S. chimbu*, *S. virescens*, *S. regularis*, *S. aspericollis*, *S. wei*, *S. cuprascens*, and *S. reticulatus*; 2. the remaining species that are characterized by rather short, only superficially or even not microreticulate elytra with deep foveae.

Since the highly transverse microreticulation of the elytra is also found in the majority of the Australian and New Zealand species, this may be the primitive state in the New Guinean species-group. Hence, *S. reticulatus* having an almost isodiametric microreticulation is perhaps the most apomorphic species of the *chimbu*-subgroup. The aedeagi of most species of the *chimbu*-subgroup (except for *S. virescens*, *S. aspericollis*, and *S. wei*) are primitive, since they lack any specialized features in the apex. *S. virescens*, *S. aspericollis*, and *S. wei*, however, have a more or less distinctly knobbed apex. Of the other species, *S. cuprascens* and *S. chimbu* possess slightly more apomorphic aedeagi as well as genital rings, whereas *S. tafa*, *S. viridiaeneus*, *S. foveipennis*, and *S. reticulatus* show a rather primitive status. So, any species of this group exhibit certain apomorphic character states, either in external morphology (*S. tafa*, *S. viridiaeneus*, *S. foveipennis*, and *S. reticulatus*), either in the ♂ genitalia (*S. cuprascens*, *S. chimbu*, *S. virescens*, *S. aspericollis*, and *S. wei*).

Within the remaining species, *S. adonis* shows highly derivative states in several external (Tab. 1; Fig. 66), as well as genitalic characters. However, with respect to the reductions of the triangular pronotal process, of the foveae on 3rd interval, and of the microreticulation of the elytra *S. violaceus* and *S. riedeli* are perhaps most closely related to *S. adonis*, without having achieved so conspicuously evolved character states (Fig. 66).

The remaining species may be further divided in three rather weakly characterized species-groups: the *wilsoni*-subgroup, including *S. wilsoni* and the closely related *S. atricornis*, characterized by some fairly primitive characters states (dark colour, more or less well developed elytral striation, distinct microreticulation of elytra, rather unspecialized ♂ genitalia); the *tristis*-subgroup (including *S. tristis* only) that may be an offshoot of the following group though having retained some primitive character

states (dark colour, unspecialized ♂ genitalia); and the *darlingtoni*-subgroup that includes the remaining species (*S. darlingtoni*, *S. bicolor*, *S. chalceus*, *S. laevifrons*, *S. minor*, *S. robustus*, *S. cheesmanni*, *S. striaticollis*, *S. caeruleus*, and *S. rufipes*) (Fig. 66). With respect to the rather drab colour, but especially with regard to the structure of the ♂ genitalia, *S. bicolor* and *S. chalceus* are perhaps the most plesiomorphic species of the latter subgroup, followed by *S. darlingtoni*, *S. minor* and *S. robustus*, while *S. cheesmanni*, *S. striaticollis*, *S. caeruleus*, and *S. rufipes* are the most apomorphic species, both in external and genitalic characters. Aedeagus and genital ring of *S. striaticollis* and even more of *S. rufipes* show certainly the most unusual shape of all species. With regard to external characters, *S. laevifrons* the ♂ of which is still unknown belongs presumably close to *S. darlingtoni* and *S. bicolor*.

Distribution

Any considerations on historical zoogeography of the New Guinean species, but even on pure distribution are severely hampered by the very fragmentary knowledge of the actual number of occurring species and of their real distributions. So the following thoughts should only be taken as preliminary pathways to a future understanding of the evolution of these beetles in New Guinea.

A short view to the distribution maps clearly demonstrates this deficiency: In Papua New Guinea specimens are known only from very few localities, mainly from the Huon Peninsula, the Chimbu

Tab. 1. Some external character states used in the construction of a cladogram for the phylogenetic relationships of the species-groups and subgroups of New Guinean *Scopodes*. States of a morphocline are indicated by lower-case letters.

No. Character	Plesiomorphic state	Apomorphic state
1. Shape of elytra	elongate, depressed	short, convex, quadrate 1a oval 1b
2. Lateral incision of elytra	absent	present 2
3. Shape of Pronotum	depressed, heart-shaped	convex, triangular 3a oval 3b
4. Basal border of pronotum	unbordered	with smooth, wide basal bead 4
5. Colour	dark, unmetallic	metallic 5
6. Microreticulation on head and pronotum	present	absent 6
7. Frontal sulci	shallow, fine	coarse and deep 7a reduced 7b
8. Posterior lateral seta of pronotum	present	absent 8
9. Transverse sulci of pronotum	dense, shallow	coarse, deep 9a reduced 9b
10. Foveae on 3rd interval	wide, though shallow	large, deep 10a small, inconspicuous 10b
11. Microreticulation on elytra	distinct, transverse, surface sericeous	distinct, almost isodiametric, surface barely sericeous 11a superficial, surface not sericeous 11b absent 11c
12. Lateral border of pronotum	present	absent 12
13. Anterior triangular process of pronotum	present, large	reduced, small 13a absent 13b
14. Apex of elytra	oblique, almost straight, sutural angle obtuse	deeply concave, sutural angle acute 14
15. Apex of stylomere 1	with setae	without setae 15

Valley, some mountains in the Wau region, and the Torricelli Mountains on the north-west coast (see also the maps of localities in Darlington 1971). Vast areas of the central western highland, as well as almost the whole eastern part of Papua New Guinea are completely uncollected. With respect to Irian Jaya the situation is even worse, although the number of species altogether recorded is larger. Only some restricted areas in the eastern and central parts of the central highlands (Fig. 64), a single locality in the Cyclops Mountains on the north-east coast and some localities in the northern and eastern part of the Vogelkop (Fig. 65) have been collected. This general deficiency is even accentuated by the occurrence of as many as 10 species in a limited, but now rather well collected area in the central eastern part of Irian Jaya. On this background the question arises, how many species will appear, when other parts of New Guinea have been equally well collected.

The real distribution of almost all species is likewise unknown, because many species are known from single or very few specimens only, and even those species of which larger series are at hand are mainly known from a single area or even one locality only. So the knowledge of the distribution of *Scopodes* in New Guinea is more than fragmentary and it is very uncertain, to what extent the extremely restricted recorded ranges of almost all species match their real ranges.

Hence, at the present state of knowledge I think it rather useless to deal with the biogeographical history of the species **within** New Guinea.

It is evident, however, that, apart from *S. altus* which is not related to any New Guinean species but to the main body of the genus, all species from New Guinea belong to a monophyletic group and probably stem from a single ancestor who immigrated into New Guinea from the south, most probably via the Cape York Peninsula in northern Queensland. This ancestor might have been rather similar to a species of the *chimbu*-subgroup. Unfortunately, the relationships of the Australian members of the genus *Scopodes* are likewise rather unknown and, in addition, the *Scopodes*-fauna of northern Australia is far less well known than that of the south. Hence, it is still unknown, to which Australian species or species-group the New Guinean species-group is most closely related. So, evaluation of the phylogenetic relations and the biogeographical events of the New Guinean *Scopodes* will be possible only after a thorough taxonomic and phylogenetic revision of the Australian *Scopodes*.

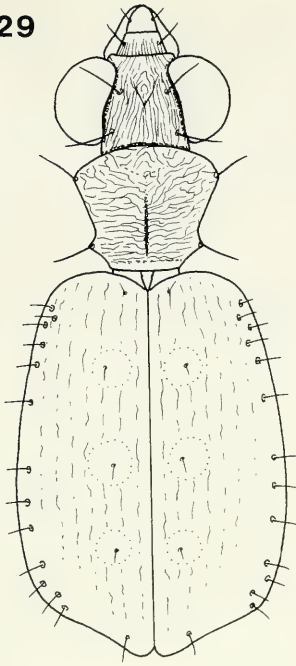
Acknowledgements

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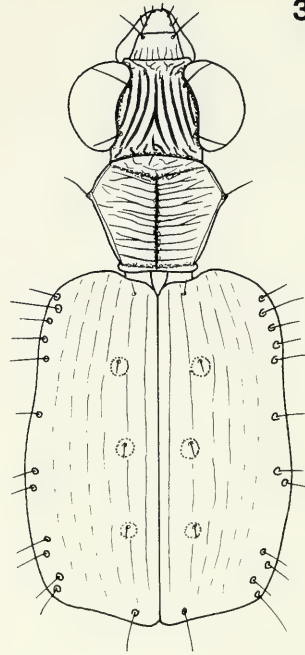
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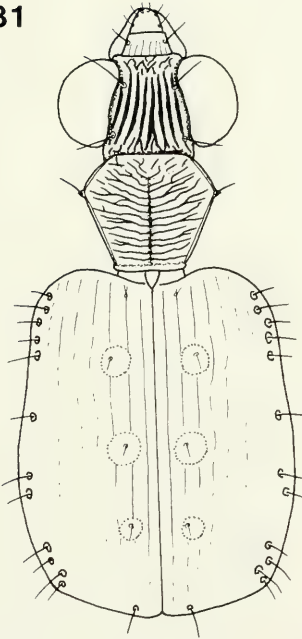
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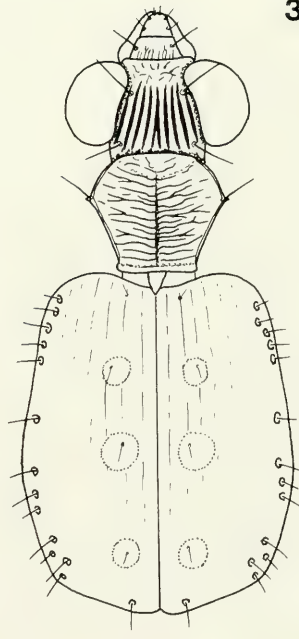
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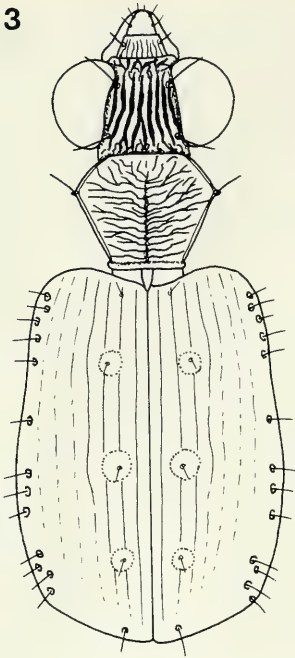


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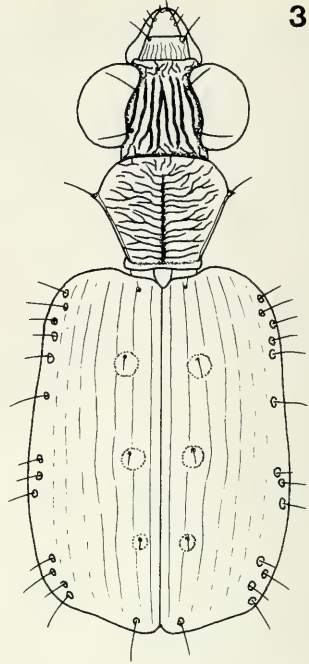


Figs 29-32. Habitus. 29. *Scopodes altus* Darlington. 30. *S. chimbu* Darlington. 31. *S. virescens*, spec. nov. 32. *S. regularis*, spec. nov. Lengths: 3.6 mm; 3.6 mm; 4.0 mm; 3.6 mm.

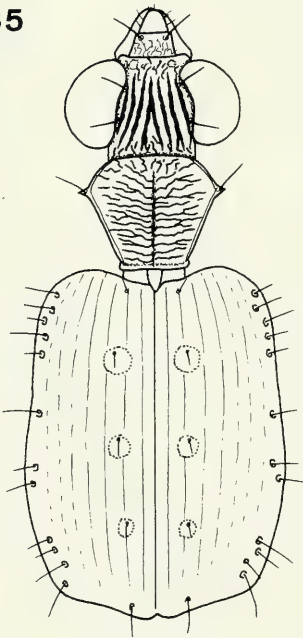
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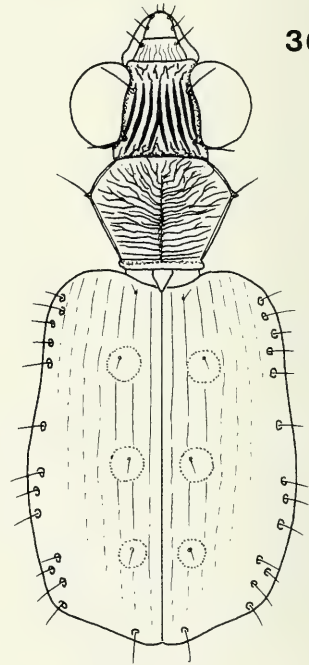
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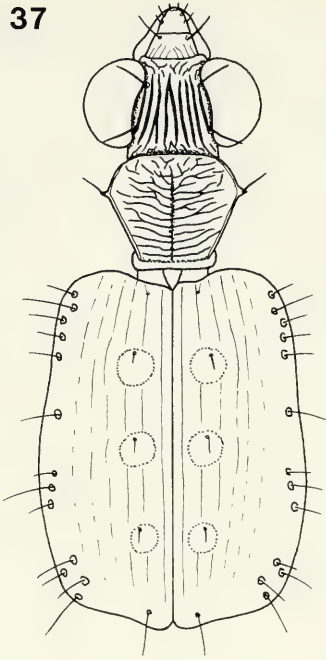


36

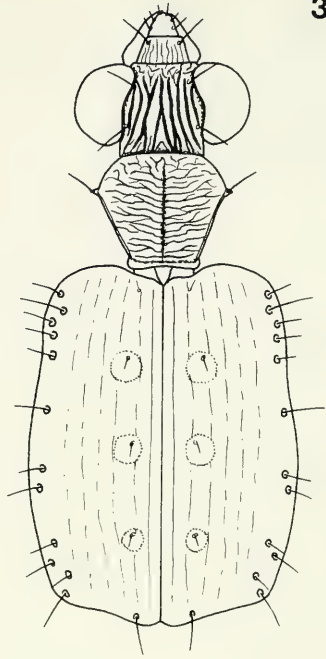


Figs 33-36. Habitus. 33. *Scopodes aspericollis*, spec. nov. 34. *S. cuprascens*, spec. nov. 35. *S. tafa* Darlington. 36. *S. viridiaeneus*, spec. nov. Lengths: 4.2 mm; 4.3 mm; 3.4 mm; 4.15 mm.

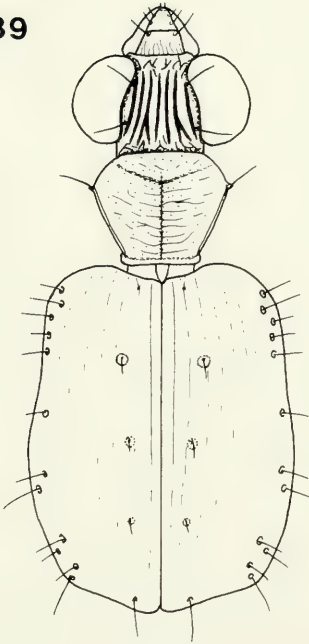
37



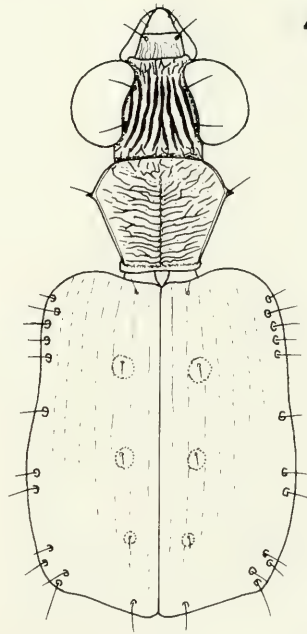
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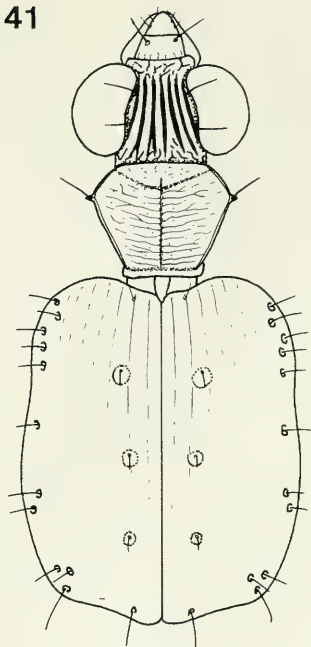


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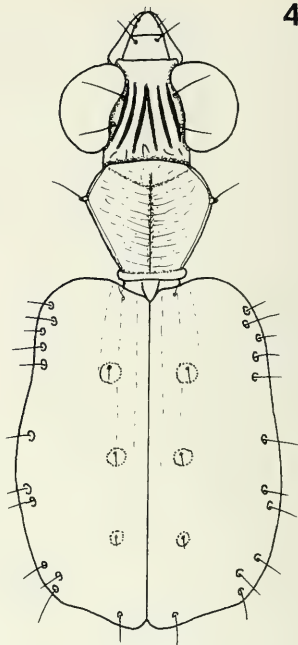


Figs 37-40. Habitus. 37. *Scopodes foveipennis*, spec. nov. 38. *S. reticulatus*, spec. nov. 39. *S. wilsoni* Darlington. 40. *S. atricornis*, spec. nov. Lengths: 4.1 mm; 3.95 mm; 3.85 mm; 3.8 mm.

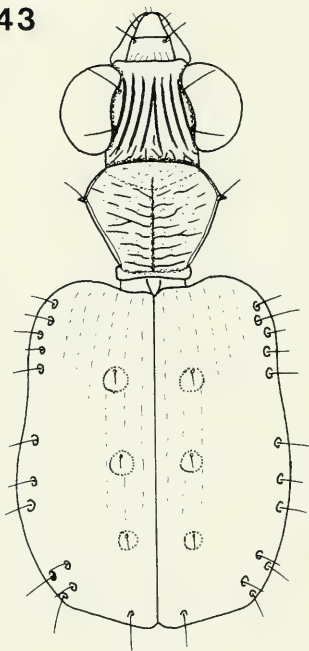
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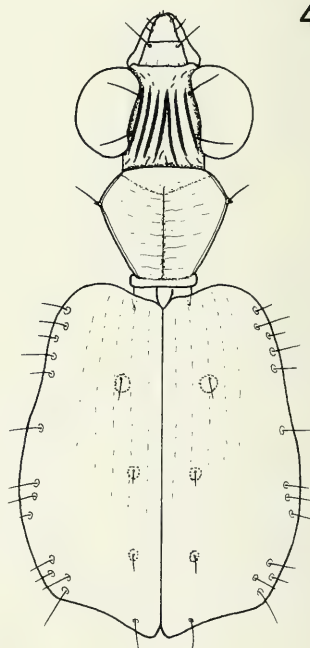
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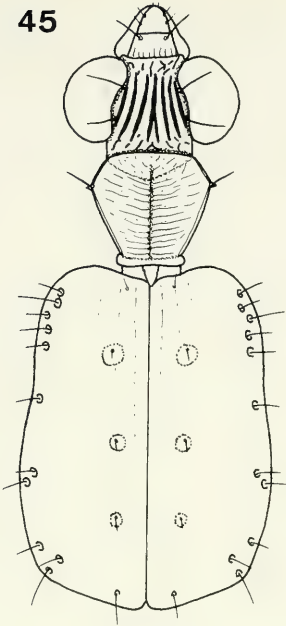


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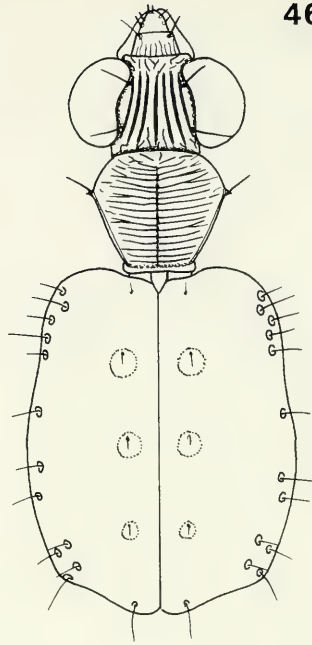


Figs 41-44. Habitus. 41. *Scopodes darlingtoni*, nom. nov. 42. *S. laevifrons*, spec. nov. 43. *S. bicolor*, spec. nov. 44. *S. chalceus*, spec. nov. Lengths: 3.3 mm; 3.35 mm; 3.8 mm; 3.8 mm.

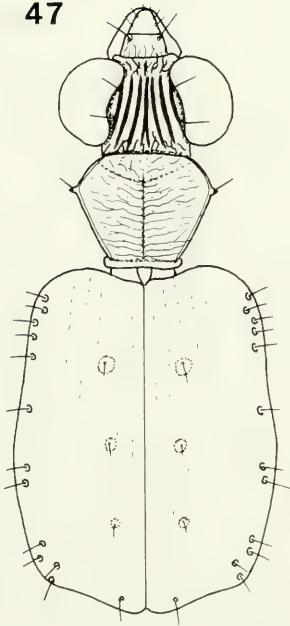
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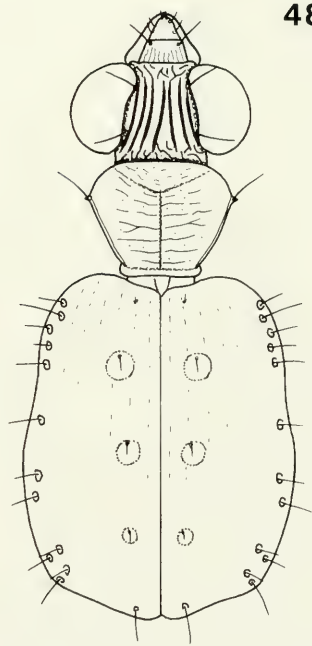
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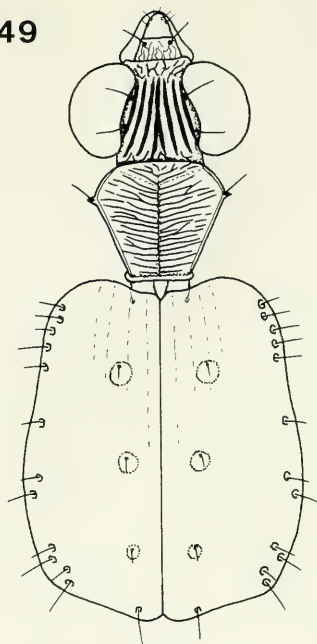


48

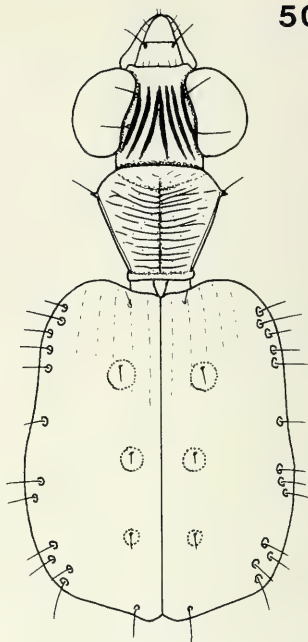


Figs 45-48. Habitus. 45. *Scopodes tristis*, spec. nov. 46. *S. cheesmanni* Darlington. 47. *S. minor*, spec. nov. 48. *S. robustus*, spec. nov. Lengths: 3.45 mm; 4.4 mm; 3.7 mm; 4.2 mm.

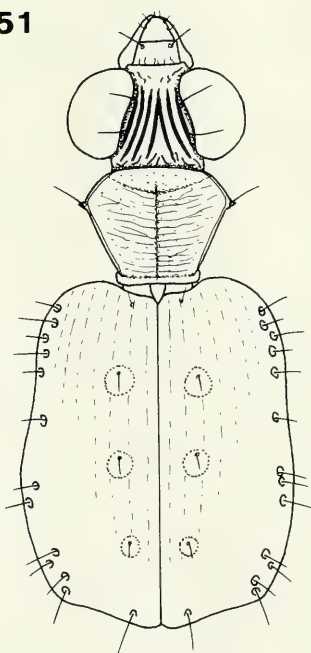
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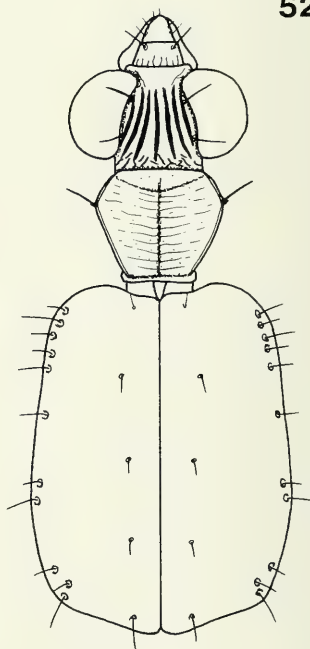
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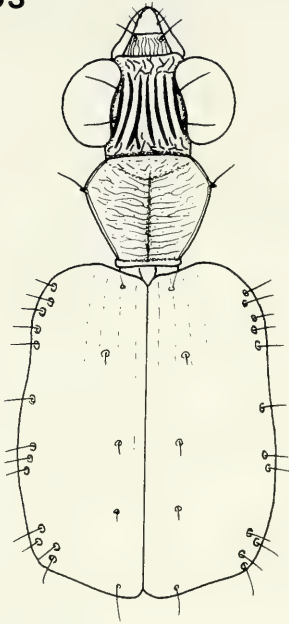


52

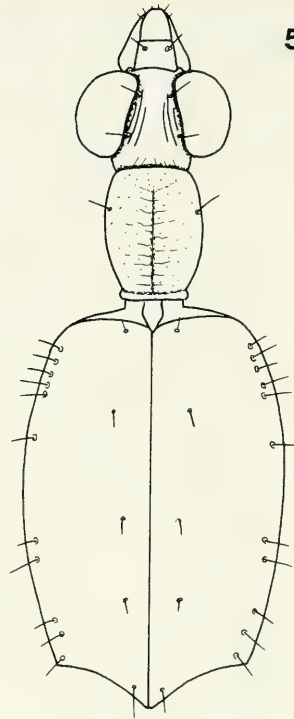


Figs 49-52. Habitus. 49. *Scopodes striaticollis*, spec. nov. 50. *S. caeruleus*, spec. nov. 51. *S. rufipes*, spec. nov. 52. *S. violaceus*, spec. nov. Lengths: 3.7 mm; 4.0 mm; 4.25 mm; 3.6 mm.

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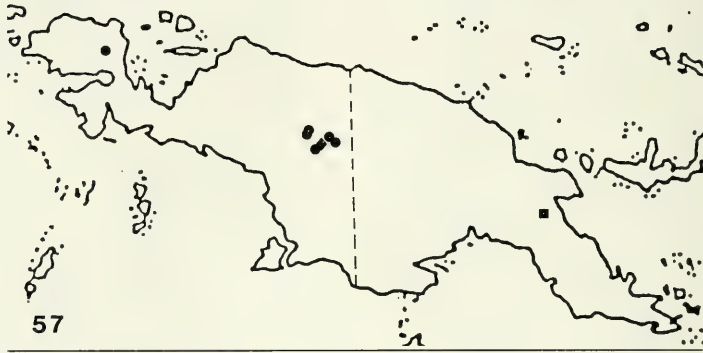
Figs 53-54. Habitus. 53. *Scopodes riedeli*, spec. nov. 54. *S. adonis* Darlington. Lengths: 3.65 mm; 4.75 mm.



Fig. 55. Distribution. *Scopodes altus* Darlington: ●; *S. chimbu* Darlington: ◆; *S. regularis*, spec. nov.: ■.



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Fig. 56. Distribution. *Scopodes virescens*, spec. nov.: ■; *S. aspericollis*, spec. nov.: ●; *S. cuprascens*, spec. nov.: ◆.
 Fig. 57. Distribution. *Scopodes wei* Bell & Bell: ■; *S. reticulatus*, spec. nov.: ◆; *S. atricornis*, spec. nov.: ●.
 Fig. 58. Distribution. *Scopodes tafa* Darlington: ●; *S. laevifrons*, spec. nov.: ◆; *S. chalceus*, spec. nov.: ■.
 Fig. 59. Distribution. *Scopodes viridiaeneus*, spec. nov.: ●; *S. bicolor*, spec. nov.: ◆; *S. tristis*, spec. nov.: ■.



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Fig. 60. Distribution. *Scopodes foveipennis*, spec. nov.: ●; *S. minor*, spec. nov.: ◆; *S. striaticollis*, spec. nov.: ■.

Fig. 61. Distribution. *Scopodes wilsoni* Darlington: ◆; *S. cheesmanni* Darlington: ●; *S. caeruleus*, spec. nov.: ▼; *S. rufipes*, spec. nov.: ■.

Fig. 62. Distribution. *Scopodes darlingtoni*, nom. nov.: ●; *S. robustus* spec. nov.: ◆.

Fig. 63. Distribution. *Scopodes violaceus*, spec. nov.: ●; *S. riedeli*, spec. nov.: ■; *S. adonis* Darlington: ◆.

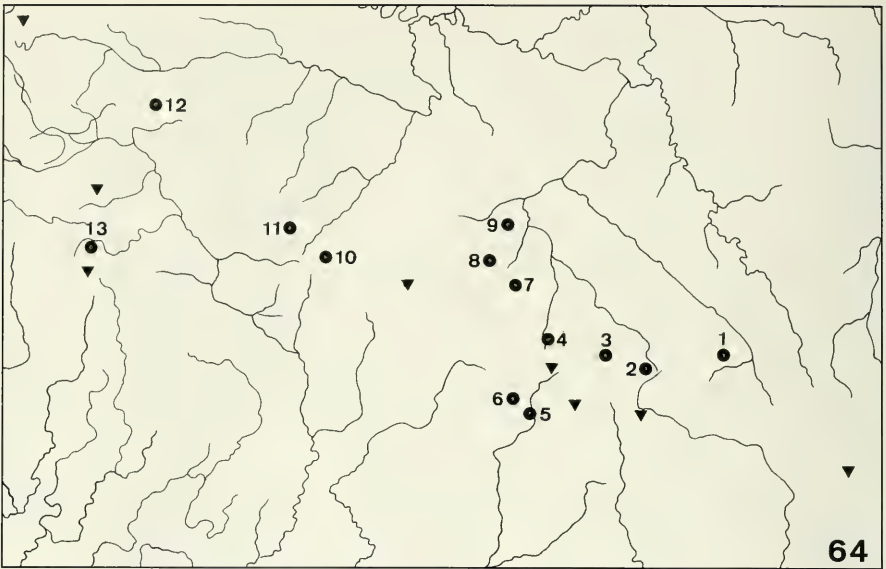


Fig. 64. Localities of recently collected *Scopodes* material in central and eastern central Irian Jaya. Eastern (right) margin is the PNG/IJ border, western (left) margin lies slightly west of Gn. Trikora (Wilhelmina Top), upper (northern) margin is crossed by the Idenburg River, lower (southern) margin meets at the right border about the former Papua/New Guinea border. Triangles denote the highest mountains. Localities: 1. Borme area (*atricornis*, *bicolor*, *cheesmanni*, *cuprascens*, *foveipennis*, *violaceus*); 2. Bime area (*cheesmanni*, *laevifrons*); 3. Tanime area (*atricornis*, *robustus*, *violaceus*); 4. Eipomek area (*robustus*); 5. Langda area (*laevifrons*, *reticulatus*); 6. Bommela area (*atricornis*, *foveipennis*); 7. Nalca area (*atricornis*); 8. Kono area (*atricornis*, *robustus*); 9. Endoman area (*rufipes*); 10. Angguruk area (*cheesmanni*, *violaceus*); 11. Pronggoli area (*laevifrons*); 12. Ilugwa area (*robustus*); 13. Lake Habbema area (*altus*).



Fig. 65. Localities of recently collected *Scopodes* material in the northeastern Vogelkop, western Irian Jaya. Triangles denote the highest mountains. 1. Warmare area (*striaticollis*); 2. Ransiki-Anggi area east of lakes Anggi (*tristis*); 3. Tetaho area (*atricornis*); 4. Testega area (*caeruleus*, *chalcus*, *riedeli*); 5. Suruai SW of Lake Anggi Giji (*foveipennis*).

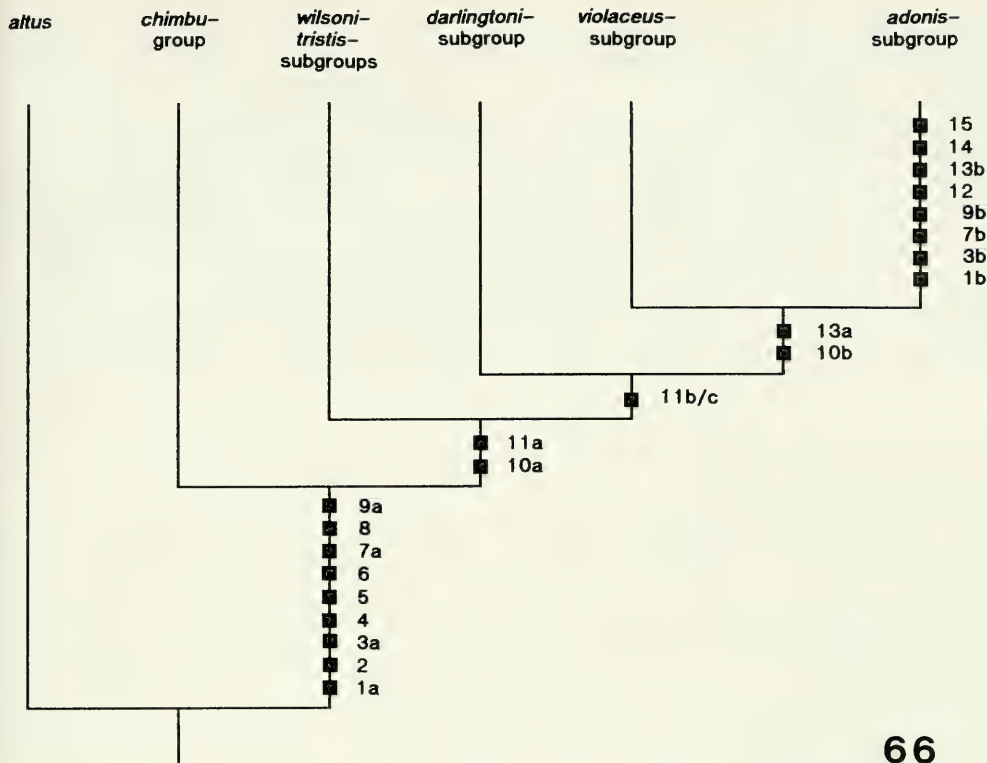


Fig. 66. Cladogram of the groups of New Guinean *Scopodes*, based on external, non-genitalic characters. For characters and their states see Tab. 1.

Alphabetical checklist of the valid New Guinean species of the genus *Scopodes*

Preoccupied names in brackets with =;
synonyms indented.

<i>adonis</i> Darlington	p. 44	<i>regularis</i> , spec. nov.	p. 12
<i>altus</i> Darlington	p. 8	<i>reticulatus</i> , spec. nov.	p. 22
<i>aspericollis</i> , spec. nov.	p. 13	<i>riedeli</i> , spec. nov.	p. 43
<i>atricornis</i> , spec. nov.	p. 25	<i>robustus</i> , spec. nov.	p. 36
<i>bicolor</i> , spec. nov.	p. 29	<i>rufipes</i> , spec. nov.	p. 40
<i>caeruleus</i> , spec. nov.	p. 39	<i>striaticollis</i> , spec. nov.	p. 38
<i>chalceus</i> , spec. nov.	p. 30	<i>tafa</i> Darlington	p. 17
<i>cheesmanni</i> Darlington	p. 33	<i>tristis</i> , spec. nov.	p. 32
<i>chimbu</i> Darlington	p. 9	<i>violaceus</i> , spec. nov.	p. 41
<i>cuprascens</i> , spec. nov.	p. 14	<i>virescens</i> , spec. nov.	p. 10
<i>darlingtoni</i> , nom. nov.	p. 26	<i>viridiaeneus</i> , spec. nov.	p. 19
(= <i>basalis</i> Darlington)		<i>wei</i> Bell & Bell	p. 16
<i>foveipennis</i> , spec. nov.	p. 20	<i>wilsoni</i> Darlington	p. 23
<i>laevifrons</i> , spec. nov.	p. 28	<i>aereus</i> , nom. nov.	
<i>minor</i> , spec. nov.	p. 35	(= <i>simplex</i> Darlington)	